

Exhibit A1

Public Redacted Version

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**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION**

IN RE GOOGLE PLAY STORE ANTITRUST LITIGATION

THIS DOCUMENT RELATES TO:

Epic Games, Inc. v. Google LLC et al.,
Case No. 3:20-cv-05671-JD

In re Google Play Consumer Antitrust Litigation,
Case No. 3:20-cv-05761-JD

State of Utah et al. v. Google LLC et al.,
Case No. 3:21-cv-05227-JD

Match Group, LLC et al. v. Google LLC et al.,
Case No. 3:22-cv-02746-JD

Case No. 3:21-md-02981-JD

PLAINTIFFS' PROPOSED REMEDY RE GOOGLE'S DESTRUCTION OF CHAT EVIDENCE

Judge: Hon. James Donato

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INTRODUCTION

After several rounds of briefing, two evidentiary hearings that included the testimony of four Google employees and a production of over 210,000 additional documents, this Court made the following findings: “Google fell strikingly short” of its duty to preserve evidence (Dkt. 469 at 16);¹ Google knowingly “gave each employee carte blanche to make his or her own call about what might be relevant in this complex antitrust case,” employing a “‘don’t ask, don’t tell’ policy for Chat preservation, at the expense of its preservation duties” (*id.* at 17-18); and Google did so as part of a deliberate, long-running scheme in which “intentionality manifested at every level within Google to hide the ball with respect to Chat,” with “individual users . . . conscious of litigation risks and valuing the ‘off the record’ functionality of Chat” (*id.* at 17). Moreover, to perpetuate this scheme, Google concealed its conduct from Plaintiffs and the Court—it “falsely assured the Court in a case management statement in October 2020 that it had ‘taken appropriate steps to preserve all evidence relevant to the issues reasonably evident in this action,’ without saying a word about Chats.” (*Id.* at 16.) Put simply, “Google intended to subvert the discovery process” by intentionally destroying “relevant, substantive business communications.” (*Id.* at 18.) This Court has also already found that Google’s intentional Chat destruction “certainly” prejudiced Plaintiffs. (*Id.*)

This Court held that “sanctions are warranted” to address Google’s deliberate misconduct, but it asked the parties to brief the appropriate sanctions, explaining that “[t]he remaining question is about the remedy,” and “[t]he remedy should fit the wrong.” (*Id.* at 1, 18-19.) To determine “an appropriate non-monetary sanction,” the Court asked “to see the state of play of the evidence at the end of fact discovery,” so that Plaintiffs could “tell the Court what *might* have been lost in the Chat communications,” recognizing the inherent difficulty of showing that which no longer exists—or, as the Court referred to it, “plaintiffs’ dilemma of trying to prove the contents of what Google has deleted.” (*Id.* at 19 (emphasis added).) As the Court noted during the September 7, 2023 hearing:

[Y]ou can't talk about things you don't know about. But you should be able to give me at least some informed sense of things that you expected to have seen or you thought you would have seen or you saw a little bit of, or whatever, and you think the chat issue impacted that in a negative way. (September 7, 2023 Hearing Transcript at 35:20-25.)

¹ Citations to “Dkt.” are to *In re Google Play Store Antitrust Litigation*, No. 3:21-md-02981-JD.

1 While no one can speak to the actual Chats that Google intentionally deleted, the record
 2 contains example after example of Google employees beginning to discuss topics highly relevant to
 3 this litigation and then quickly agreeing to turn history off to trigger automatic deletion and shield
 4 further discussion from discovery, necessarily ending the record available to Plaintiffs. These
 5 interrupted Chats are the tip of the iceberg and are powerful evidence of key information—which by
 6 any reasonable inference is information that Google thought would be harmful to its legal position if
 7 disclosed—being deliberately and permanently destroyed, and thus hidden from Plaintiffs and the
 8 Court.

9 Had all relevant Chats been preserved and produced, Plaintiffs believe they would have had
 10 additional evidence, which in all likelihood would include clearer and more candid communications, to
 11 prove the anticompetitive purpose of the contracts Google signed with original equipment
 12 manufacturers (“OEMs”) and developers. For example, Plaintiffs believe that these deleted documents
 13 would have shown that Google’s revenue share agreements with OEMs were meant to preserve Google
 14 Play’s app distribution dominance and that Google’s Project Hug agreements with would-be app store
 15 competitors were intended to pay them not to compete. Further, Plaintiffs believe Google employees
 16 discussed the true, anticompetitive motivations behind Google’s post-litigation policy changes to
 17 Google Play, as well as its top-secret agreements with Apple. But Google employees were trained to
 18 speak freely about these topics and others without the risk of disclosure in this litigation by simply
 19 keeping history off in Chats, which they did in droves. (*See generally* Dkt. 469.)

20 The record before this Court easily justifies an adverse inference instruction. Google
 21 intentionally engaged in a scheme targeted specifically at concealing from discovery its most
 22 sensitive—and most damning—communications, including about the topics at the heart of this
 23 litigation. Google’s assertion that Plaintiffs obtained most or all relevant communications is
 24 unfounded because Google itself does not know what information it destroyed. Moreover, the
 25 evidence squarely contradicts Google’s assertion, unequivocally showing that Google employees
 26 deliberately took their most sensitive discussions, including those subject to litigation holds, from
 27 preserved formats to “History Off” Chats, and that Google did in fact delete hundreds of thousands—
 28 perhaps millions—of those Chats rather than produce them in litigation. This was standard practice at

1 Google. Indeed, Google instructed its employees that history off Chats were protected from
 2 disclosure, encouraged copying counsel to apply attorney-client privilege (sometimes referred to as
 3 “fake privilege”), and warned employees that careless communications could end up being repeated in
 4 a courthouse. For more than 10 years, Google automatically destroyed Chats, even for custodians
 5 under a legal hold during active litigation. (Dkt. 429-3 ¶ 9.) The only reasonable conclusion is that
 6 Google **succeeded** in its scheme and that the destroyed Chats would have been (at least on average)
 7 **more** sensitive and **more** damning to Google’s positions in this litigation than the communications
 8 Google actually preserved and produced. Google’s only failure is that in this litigation, for the first
 9 time in more than a decade, it got caught and its scheme was exposed.

10 Despite all that, and in light of this Court deciding against a “terminating” remedy (Dkt. 469 at
 11 19), Plaintiffs seek a relatively modest remedy: a permissive adverse inference instruction that (i) sets
 12 forth at the beginning of trial the facts the Court has already found regarding Google’s intentional
 13 destruction of Chats, and (ii) directs the jury at the end of trial that it “may” infer that the evidence
 14 Google destroyed would have been harmful to Google’s case and helpful to Plaintiffs’ case. As
 15 explained further below, this adverse inference instruction is both an appropriate remedy as a matter of
 16 law and proportional to the conduct at issue.

17 **ARGUMENT**

18 “[A] trial court . . . has the broad discretionary power to permit a jury to draw an adverse
 19 inference from the destruction or spoliation against the party or witness responsible for that behavior.”
 20 *Glover v. BIC Corp.*, 6 F.3d 1318, 1329 (9th Cir. 1993) (citation omitted); *see Johnson v. Wells Fargo*
 21 *Home Mortg., Inc.*, 635 F.3d 401, 422 (9th Cir. 2011) (finding no abuse of discretion where an
 22 “instruction would ‘creat[e] a presumption in favor of [defendant] that the spoliated evidence was
 23 unfavorable to [plaintiff]’ (citation omitted)” if the factfinder (there, the jury) concluded that evidence
 24 was destroyed). This Court has already determined that sanctions are appropriate; the only unresolved
 25 aspect is determining that “the remedy fit the wrong.” (Dkt. 469 at 18-19.)

26 Google’s deletion of Chats deprived Plaintiffs of the most candid and unsanitized discussions
 27 regarding Google’s anticompetitive conduct. Such evidence could have eradicated Google’s defenses
 28 in this litigation, but is unavailable to Plaintiffs and the jury due to Google’s intentional discovery

1 misconduct. Such evidence would not be duplicative of the evidence that *is* available to Plaintiffs,
 2 because Google’s scheme was geared to destroying the *most* sensitive communications—and based on
 3 the evidence, that scheme succeeded. Accordingly, an adverse inference instruction is proportional to
 4 the wrong and should be issued.

5 **I. Google Intentionally Deprived Plaintiffs of Evidence that Would Have
 6 Strengthened Their Case.**

7 As discussed in detail below, Google’s destruction of Chats made it more difficult for Plaintiffs
 8 to prove their case. Google has deprived Plaintiffs of evidence regarding multiple critical aspects of its
 9 conduct, including its agreements with OEMs (Section I.A, below); its agreements with developers
 10 (Section I.B, below); its post-litigation changes to its business model (Section I.C, below); and its
 concealed business relationship with Apple (Section I.D, below).

11 **A. Google Intentionally Deprived Plaintiffs of Evidence Regarding
 12 Anticompetitive Agreements with OEMs.**

13 Plaintiffs previously established that Google employees destroyed countless Chats regarding
 14 Google’s Mobile Application Distribution Agreements (“MADAs”) and Revenue Share Agreements
 15 (“RSAs”), as well as other aspects of its OEM partnerships. (*See* Dkt. 468 at 2-3.) These agreements
 16 are central to Plaintiffs’ cases and Plaintiffs intend to prove that they restrain competition. As noted
 17 above, Plaintiffs will be forced to prove this point with an incomplete record. The top executives
 18 responsible for these agreements, including Jamie Rosenberg and Jim Kolotouros, deleted all their
 19 Chats.² As Mr. Kolotouros recently testified at the Department of Justice’s Search antitrust trial
 20 against Google, he was cognizant that Google was constantly under regulatory pressure and therefore
 21 approached his written communications in a manner designed “to protect Google.” (Moskowitz Decl.,
 22 Ex. 31 at 956:12-958:3.) Accordingly, Mr. Kolotouros—who has “used Chat with Mr. Rosenberg to
 23 discuss Samsung revenue share” (*id.* at 971:8-11)—never turned his history on (*id.* at 969:22-970:6).
 24 Google has thus deprived Plaintiffs of valuable evidence regarding core issues in dispute in these cases
 25 that Plaintiffs could have used to great effect at trial.

27
 28 ² Moskowitz Decl., Ex. 21 at 481:17-23 (Kolotouros testifying to having “had history off . . . for as
 long as I have been using Google Chat”); Ex. 29 at 103:14-17 (Rosenberg: “I have not done anything
 to preserve chats for this litigation.”).

i. *Revenue Share Agreements*

In 2019, Google recognized that “Chinese OEMs and Samsung were actively investing in creating their own bundles of apps and services that could be competing with the GMS suite of apps and services.” (Moskowitz Decl., Ex. 21 at 244:22-245:3; Ex. 5 at 8107.R.) It needed a solution to “help[] stem the tide of emerging app stores” on Android. (Moskowitz Decl., Ex. 21 at 218:10-14; Ex. 1 at -9615.) The RSA 3.0 program provided that solution. Google decided “to spend [REDACTED] in 2020 which would grow to [\$]4.5 billion in 2023” in “the form of revenue share both from Google Search and Google Play.” (Moskowitz Decl., Ex. 21 at 250:5-14.) In exchange, Google secured exclusivity agreements from nearly every major Android OEM—agreements that ensured the OEMs would “not . . . preinstall any other app store other than Google Play” (*id.* at 290:21-291:2). Google began entering into RSAs with Google Play exclusivity terms in 2020. Many were signed after this litigation began, and more are being negotiated and renewed through the present.

RSAs were a regular topic of discussion in Chats that have been destroyed. For example, the lead strategy executive for Android boasted, “I talk about RSA related things all day and I don’t have history on for all my chats :).” (Dkt. 469 at 12.) When one of her colleagues noted that he was on a litigation hold (as was she) and thus was uncomfortable with having such discussions off the record, the strategy executive decided it was better to “take you off this convo _____,” which she apparently did. (*Id.*) This was one of many Chats where this strategy executive instructed others to turn history off when discussing Google’s RSAs or other relevant topics, including those directly subject to litigation holds. (See, e.g., Dkt. 468-6 (RSAs); Dkt. 468-7 (OEM partnerships); Dkt. 468-8 (MADAs).)

Google has contended that its decision to pay OEMs to “install Google Play to the exclusion of their own app stores” is procompetitive because it prevents app store fragmentation, providing users with a better “out of the box” experience and making Android phones more competitive with Apple’s iPhone. (Moskowitz Decl., Ex. 21 at 291:23-292:16.) Plaintiffs believe that Google’s deleted Chats (including those from the *strategy* executive) would have flatly refuted that theory. For example, behind closed doors (as in their “History Off” conversations) employees may have chatted freely about the motivation for these provisions, revealing that the RSAs were about impeding competition rather than the party line of preventing app store “fragmentation.” Or they may have celebrated that an

1 agreement was executed and another competitive threat was extinguished. It is also likely that Google
 2 employees discussed the success of the program in achieving Google's anticompetitive goals, such as
 3 whether "the Chinese OEMs like Xiaomi, Oppo, [and] Vivo" in fact chose, as Google hoped, "to
 4 forego their alternative app stores that they already had and preinstall only Google Play." (*Id.*
 5 at 291:3-10.) Plaintiffs will never be able to show the Chats about these topics to the jury because
 6 Google intentionally destroyed them.

7 **ii. *Mobile Application Distribution Agreements***

8 Through the MADA, Google licenses to OEMs a bundle of 11 Google apps and hundreds of
 9 thousands of APIs. The bundle includes Google's most popular apps—such as YouTube, Maps and
 10 Chrome—as well as Google Play. The APIs are essential for Android smartphones; they "help support
 11 functionality of all Android applications." (*Id.* at 447:14-18.) Through the MADA, Google ties
 12 Google Play to its popular apps and APIs, because Google requires that "to the extent [OEMs] opt to
 13 use even a single Google app or Google service, they must preinstall that entire bundle under the
 14 MADA." (*Id.* at 105:9-14.) And Google "require[s] Google Play to be located on the default home
 15 screen." (Moskowitz Decl., Ex. 30 at 39:4-8.) The MADA thus helps secure Google Play's
 16 dominance, because it ensures that "Google Play is preinstalled on the default home screen of nearly
 17 all Android smartphones." (*Id.* at 44:14-18.)

18 Chats about the MADAs undoubtedly took place and were deleted during the pendency of these
 19 lawsuits. In one Chat Google produced, two employees began discussing the MADAs, and one
 20 promptly asked: "would it be too much to ask you to turn history off? . . . lots of sensitivity with legal
 21 these days :)." (Dkt. 468-8.) Following this request, the Chat abruptly ended, revealing that history
 22 was turned off and all further discussions that took place were destroyed forever. This is effectively
 23 conclusive proof that highly relevant communications were deleted, precisely *because* of their
 24 relevance to litigation. The loss of these sensitive Chats about foundational agreements to Google's
 25 anticompetitive behavior undoubtedly prejudiced Plaintiffs, left to piece together Google's misconduct
 26 from the sanitized remnants of Google's "Communicate with Care" training. (See Dkt. 469 at 3-6.)

27 **iii. *Google's Efforts to Pay Samsung Not To Compete***

28 Samsung devices are responsible for [REDACTED] of Google Play's approximately [REDACTED]

1 in annual revenue. (Moskowitz Decl., Ex. 21 at 310:4-18; Ex. 5 at -8123.) After Epic launched
 2 Fortnite on Samsung's Galaxy Store—the first-ever major app to launch on that store and not on
 3 Play—Google launched Project Banyan, which had a goal of eliminating the Galaxy Store as an
 4 independent distribution channel for Android apps so as “to keep Play as the preeminent distribution
 5 platform for Android.” (Moskowitz Decl., Ex. 21 at 363:16-20; Ex. 2 at -8211.) To further that goal,
 6 senior Google executives met with top Samsung executives, and “Google offered to pay at this meeting
 7 \$200,000,000 over four years to Samsung.” (Moskowitz Decl., Ex. 21 at 374:20-23.) In exchange for
 8 these payments, Google asked Samsung to effectively shut down the Galaxy Store. (*Id.* at 375:18-22.)
 9 “Samsung was receptive to Google’s proposal that Google pay Samsung \$200,000,000 in exchange for
 10 this agreement not to have its own Samsung Galaxy Store.” (*Id.* at 376:13-19.) Project Banyan ended
 11 abruptly in 2019 because Google’s legal team realized it was too much of a risk.

12 The destroyed Chats undoubtedly would have revealed the anticompetitive intent behind
 13 Google’s plans, and there is already evidence in the record establishing that Google employees
 14 responsible for the relationship with Samsung discussed their strategy with respect to Samsung over
 15 Chat. (Moskowitz Decl., Ex. 29 at 93:1-10.) Plaintiffs expect the Chats the jury will never see—
 16 because Google destroyed them—would have revealed conversations about the need to stop the
 17 Samsung Galaxy Store from competing with Play. They would have discussed how Google could pay
 18 off Samsung, like it had done with other competitors, and have Samsung forego pursuing app store
 19 competition. Employees would have also discussed the benefits Google would reap from preventing
 20 competition and Google’s disappointment at not being able to finalize the deal with Samsung. These
 21 sensitive discussions would have been conducted in the safety of “history off” Chats and then
 22 permanently deleted.

23 Google reconceived Project Banyan in 2020, when it proposed to “pay Samsung [REDACTED]
 24 over four years” under a new RSA “[i]n exchange for default home screen exclusivity” for Google
 25 Play and other benefits. (Moskowitz Decl., Ex. 25 at 360:4-15; Ex. 8 at -8762.R.) Google believed
 26 this deal—which would require “that the Galaxy Store . . . be moved off of the home screen of
 27 Samsung’s devices” (Moskowitz Decl., Ex. 25 at 359:12-360:2)—would secure \$[REDACTED] for Google
 28 “[a]t risk to Play via Samsung app store” (*id.* at 366:24-367:3; Moskowitz Decl., Ex. 8 at -8768.R).

1 Google and Samsung signed three RSAs in November 2020, where Google “would pay out between
 2 [REDACTED]” (Moskowitz Decl., Ex. 25 at 388:9-15; Ex. 12 at
 3 -2105), but they ultimately did not require home screen exclusivity for Google Play. When asked
 4 during his deposition why Google abandoned that term, Christopher Li, the lead Samsung partnership
 5 executive, claimed he could not “recall the exact specifics of how I reached that decision” and declined
 6 to elaborate. (Moskowitz Decl., Ex. 25 at 377:1-378:6.)³ But Jamie Rosenberg had previously
 7 indicated that if Google “couldn’t use rev share to secure confidence that [Samsung] won’t drive down
 8 to [REDACTED] the fees Google charged to developers then Google “wouldn’t do” an RSA agreement with
 9 Samsung at all. (Moskowitz Decl., Ex. 4 at -7017.) In the same email, he noted that any
 10 understanding reached would need to be “[s]ubject to lots of legal advice on what ‘securing
 11 confidence’ can mean.” (*Id.*)

12 Google employees unquestionably discussed Google’s approach to eliminating competition
 13 from Samsung over Chat. Mr. Rosenberg admitted to having such discussions during the January 12,
 14 2023 hearing (Moskowitz Decl., Ex. 29 at 93:1-10), and admitted he had “not done anything to
 15 preserve chats for this litigation” (*id.* at 103:14-17).⁴ The deleted Chats likely would have explained
 16 why Google was prepared to pay hundreds of millions, [REDACTED], to move Samsung’s app store
 17 off the home screen; why explicit formal agreements to do so were never executed; and whether
 18 Google arrived at any unwritten understandings with Samsung as part of their current [REDACTED]
 19 [REDACTED] RSA deals that gave Google the “confidence” Mr. Rosenberg suggested would be the gating
 20 item for any deal.⁵ By deleting its Chats, Google deprived Plaintiffs of important evidence on these
 21 highly relevant topics.

22
 23
 24

25 ³ This executive, like so many others, could not recall turning his Chat history on even once during
 his custodial period. (Dkt. 432-2 at 14, Ex. C.)

26 ⁴ The other executives most involved in Google’s dealings with Samsung likewise **never once**
 turned on their Chat history, including Mr. Kolotouros, Mr. Li, Mr. Samat and Mr. Lockheimer.
 (Dkt. 432-2 at 14, Ex. C); Dkt. 469 ¶ 34 (finding that Google employees such as Mr. Rosenberg did not
 preserve their Chats while engaging in discussions material to this litigation).

27 ⁵ Moskowitz Decl., Ex. 29 at 103:14-17 (Rosenberg: “I have not done anything to preserve chats
 for this litigation.”).

B. Google Intentionally Deprived Plaintiffs of Evidence Regarding Anticompetitive Agreements with Android Developers.

One of Plaintiffs' core claims is that Google had an initiative called "Project Hug" that involved dozens of anticompetitive agreements with customers and would-be competitors. By intentionally ensuring the destruction of Chats, Google disadvantaged Plaintiffs at trial by depriving them of evidence that would have helped prove that these agreements are intended to—and do—restrain competition.

i. *Project Hug*

In 2019, Google determined that “over \$ [REDACTED] of revenue was at risk over the course of 2019 to 2022 if developers moved to alternative Android app distribution platforms other than Google Play.” (Moskowitz Decl., Ex. 19 at 169:16-23, Ex. 3 at -2825.) By July 2022, Google entered into agreements with at least 24 top developers that have “mitigated the risk that the developer[s] would have an incentive to distribute outside of Play.” (Moskowitz Decl., Ex. 27 at 170:7-11; Ex. 11 at -9919.) Google paid these developers at least [REDACTED] dollars to avoid competitive risk. (Moskowitz Decl., Ex. 15 at 6705.R.) Many of these agreements were negotiated and signed after these lawsuits were filed.

Project Hug was discussed over Chat during the period when Google’s retention obligations for this litigation were in force. For example, Purnima Kochikar—Google’s most senior developer partnerships executive—admitted that she had her “default setting to delete chats every 24 hours” (Moskowitz Decl., Ex. 27 at 22:2-9), and that “Project Hug” and related programs are her “day-to-day work” (*id.* at 104:4-8). Lawrence Koh, another lead executive who worked on Project Hug, admitted that “[e]veryone at Google used it [Google Chat] at least on my team, used it on a daily basis.” (Moskowitz Decl., Ex. 19 at 113:14-114:8.) Mr. Koh could not recall ever turning Chat to “history on.” (*Id.* at 114:15-23; *see also* Moskowitz Decl., Ex. 20 at 31:4-11.)

Google’s destruction of its Project Hug Chats is highly prejudicial to Plaintiffs. Google has stated that it “will show at trial that these agreements are pro-competitive efforts to satisfy its developer customers and compete with Apple.” (Dkt. 480 at 2.) Plaintiffs disagree with these contentions but will be forced to respond to them at trial using only the documents that Google decided

1 to preserve. The candid, unfiltered Chats that Google intentionally destroyed undoubtedly contained
 2 more frank discussions of Project Hug’s true goal—preventing app store competition *within* Android.
 3 Such evidence could defeat Google’s defenses, but it is unavailable to Plaintiffs due to Google’s
 4 discovery misconduct.

5 **ii. Google’s Agreements Not To Compete with ABK, Riot and Supercell**

6 Activision Blizzard, Inc. (“ABK”) and Riot Games, Inc. (“Riot”) are among the Project Hug
 7 developers who “specifically told Google that they were considering their own competing Android app
 8 stores.” (Dkt. 376-9 at 200:4-20.) When Google sought to enlist ABK in Project Hug, ABK told
 9 Google that “[i]f this deal falls through . . . they will launch their own mobile distribution platform
 10 (partnering with another ‘major mobile company’).” (Dkt. 376-4 at -0919; *see also* Moskowitz Decl.,
 11 Ex. 15 at -6694.R.) Google agreed to pay ABK \$360 million between 2020 and 2023 to stop that
 12 threat. (Dkts. 376-7, 376-8.) Google and ABK were close to renewing their agreement for another
 13 three years in late 2022, at which time Google was prepared to spend another [REDACTED] to stop
 14 ABK from launching its own store. (Moskowitz Decl., Ex. 28 at -4347.)

15 In a similar deal (albeit on a smaller scale), Google agreed to pay Riot \$28 million in marketing
 16 support in 2020 (Dkts. 376-5, 376-6) with “[REDACTED]”
 17 “[REDACTED]” (Moskowitz Decl., Ex. 19 at 299:13-20; Ex. 7
 18 at -8691.) [REDACTED] [REDACTED]. (Moskowitz
 19 Decl., Ex. 6 at -0008.) [REDACTED]
 20 [REDACTED] (Moskowitz Decl., Ex. 17 at -2563.)

21 Google also entered into an agreement not to compete with Supercell Oy (“Supercell”), another
 22 major developer, in [REDACTED] (Moskowitz Decl., Ex. 27 at 179:1-7.) [REDACTED]
 23 [REDACTED]
 24 [REDACTED] (*Id.* at 178:6-10.) [REDACTED]
 25 [REDACTED].” (*Id.* at 179:10-13.)

26 Google claims that none of these agreements is in fact “an actual horizontal agreement not to
 27 compete,” because (Google brazenly asserts) there is no “direct evidence of a meeting of the minds”
 28 between Google and the developers, and no “direct evidence of a promise not to open a competing app

1 store.” (Dkt. 355 at 12-13.) Plaintiffs disagree with Google’s characterizations, but Google’s
 2 arguments make the prejudice of Google’s Chat destruction clear. Google’s produced documents
 3 represent just the tip of the iceberg in terms of Google’s internal discussions about these major deals
 4 and their true anticompetitive goals; consistent with Google’s scheme and admonitions to its
 5 employees, more candid “sensitive” discussions about the nature and goals of deals with these
 6 developers would have been moved to off-the-record Chats—which Google destroyed. Whereas the
 7 Project Hug contracts and emails support a finding of a conspiracy, the Chats are where the conspiracy
 8 would have been less circumspectly described. Plaintiffs have thus been prejudiced by Google’s
 9 intentional destruction of Chats.

10 **C. Google Intentionally Deprived Plaintiffs of Evidence Regarding Post-
 11 Litigation Changes to Google Play’s Business Model.**

12 After these lawsuits were filed, Google changed many of its policies and agreements
 13 concerning Android app distribution and in-app payments. Google has argued that these business
 14 model changes are evidence that it listens to developer concerns and competes vigorously with Apple.
 15 The limited documents Google has produced about these changes suggest otherwise: that Google’s
 16 decisions were driven by litigation and regulatory pressure, rather than competition.

17 Chats in which employees planned and discussed these changes almost certainly would have
 18 shown Google’s true motives. In addition, Google’s post-litigation evaluations of its business model—
 19 when legal risks and the likelihood of evidentiary disclosures would have been top of mind—assessed
 20 broad changes that Google could have made to its business model if required by regulators. Those
 21 discussions over Chat could have demonstrated the existence of less-restrictive alternatives to its
 22 challenged practices, and the Chats in which employees discussed them would have provided evidence
 23 of their viability. Here, as elsewhere, Google’s destruction of Chats deprived Plaintiffs of the best
 24 evidence they could have used to confront and impeach Google’s witnesses in depositions and at trial.
 25 Only an adverse inference instruction can address the prejudice Plaintiffs have suffered.

26 **i. September 2020 Policy Changes**

27 In the wake of this litigation, Google announced a change to its policy of issuing pretextual
 28 security warnings to Android users who attempt to download apps from competing stores every time

1 the user attempted such a download. Google publicly positioned this announcement as an effort “to
 2 make it even easier for people to use other app stores” in the forthcoming Android 12. (Moskowitz
 3 Decl., Ex. 32.) Google is likely to argue this change was benevolent, made in the spirit of openness
 4 and as a response to requests from developers. But in one of the few Chats Google produced on this
 5 topic, Android’s Head of Security referred to this announcement as “PR crap” and wrote that the
 6 change was only made because one of the Play Store’s lead executives, “Sameer [Samat,] wanted to
 7 *indicate we[’]re being flexible.*” (Moskowitz Decl., Ex. 10 at -1967 (emphasis added).) It is highly
 8 likely that other employees, such as Mr. Samat, spoke candidly on this topic in Chats, and admitted
 9 that it was driven by litigation and regulatory concerns and would not in fact make direct downloading
 10 easier. The jury will never see those Chats because Google intentionally destroyed them.

11 It is also highly likely that Google deleted Chats explaining why YouTube—which is one of
 12 Google’s own businesses—refused for years to use Google Play Billing (“GPB”), and instead used its
 13 own payment solution, until Google implemented another policy change in 2022. In a Chat that
 14 Google did not destroy, the CEO of YouTube complained to Hiroshi Lockheimer, the Senior Vice
 15 President who runs Google Play and Android, that the policy change was “obviously a big change and
 16 our team feels it will hurt us competitively,” that moving to GPB would require “extra eng from
 17 Sundar” (meaning extra resources), and that “Spotify is our competitor who is being exempted so we
 18 need to know how we can innovate on billing and not be stuck with a lot of larger prioritizations
 19 decisions that might be right for play billing but bad for YouTube.” (Dkt. 414-08 at 2-3.) Likewise,
 20 Eric Chu, a YouTube employee and one of the few outlier custodians who actually turned history on
 21 and for whom a significant number of Chats were preserved, held candid discussions about the effects
 22 of YouTube’s move to GPB, noting that it “will most likely result in features regression for YouTube
 23 and/or huge amount[s] of work for Play.” (Moskowitz Decl., Ex. 9 at -0816.)

24 While these admissions support Plaintiffs’ arguments about the policy change, they are only the
 25 tip of the iceberg.⁶ The destroyed Chats likely would have offered valuable details about YouTube’s
 26 reasons for resisting and the challenges it faced when it ultimately switched from its own payment
 27

28 ⁶ Mr. Lockheimer could not recall turning on his Chat history even once. (Dkt. 432-2 at 14, Ex. C.)
 All of his Chats on this topic have been destroyed, unless, as apparently happened here, the other
 employee preserved them.

1 solution to GPB—an event that occurred and would have been discussed after this litigation began.

2 **ii. *Project Runway***

3 On March 16, 2021, Google announced that it was reducing its revenue share “to 15% for the
 4 first \$1M (USD) of revenue every developer earns each year.” (Moskowitz Decl., Ex. 33 at 1-2.) This
 5 announcement was the outcome of Project Runway, a program that began shortly after this litigation
 6 commenced and through which Google considered much broader changes to the Google Play business
 7 model. (Dkt. 468 at 4.)

8 Project Runway and Google’s other business model changes are highly relevant because they
 9 recognize the viability of multiple less-restrictive alternatives to Google’s challenged restraints and
 10 demonstrate that the incremental changes that Google did adopt were driven by regulation and
 11 litigation rather than competition, as well as Google’s desire to extract more monopoly rents from
 12 developers. It is clear that Project Runway was discussed over Chat, and the deleted Chats likely
 13 would have shed important light on these topics, as well as Google’s reasons for rejecting broad
 14 changes to its business model in favor of the modest one that it announced. For example, in a Project
 15 Runway “war room” Chat from the time of its March 2021 launch, one employee asked “why we
 16 moved to a small dev[eloper] framing”—a key question about Google’s motive for the change it
 17 made—but others decided “to change from a room to a group chat to get the right settings here (i.e.,
 18 history off)” without answering that question on the record. (Dkt. 468-10.) This is yet another
 19 example of conclusive evidence that shows relevant information that was intentionally deleted. By
 20 destroying these Chats, Google has ensured that the record on Project Runway is incomplete.

21 **D. Google Intentionally Deprived Plaintiffs of Evidence Regarding Google’s
 22 Relationship with Apple.**

23 Google has argued that a wide variety of its restraints—including Project Hug, Project Banyan,
 24 and the challenged MADA and RSA 3.0 terms—are “procompetitive” because they are driven by
 25 competition with Apple. Plaintiffs will show that in fact, instead of competing, Google and Apple
 26 “hugely cooperate”—to quote one Google executive—including because of their [REDACTED]
 27 [REDACTED] “revenue share deal.” (Moskowitz Decl., Ex. 21 at 74:14-75:11.) According to Mr. Pichai,
 28 Google pays Apple “[REDACTED]” under this agreement, and “[REDACTED]”

1 (Moskowitz Decl., Ex. 30 at 28:5-13.) In exchange, the agreement ensures that, “Google revenue
 2 from search coming from Apple was somewhere between [REDACTED] in 2021.”

3 (Moskowitz Decl., Ex. 26 at 345:20-346:2.) For over a year, Google refused to produce to Plaintiffs
 4 core documents about this major commercial arrangement, claiming the agreement between the two
 5 companies was one of Google’s and Apple’s “most sensitive business documents.” (Moskowitz Decl.,
 6 Ex. 16 at 1.) Ultimately, Google reluctantly produced few documents discussing this agreement, and
 7 virtually no Chats—even though Mr. Pichai, who clearly approved the deal and meets with Apple’s
 8 CEO to discuss it has testified that he does use Google Chat “for business purposes.” [REDACTED]

9 (Moskowitz Decl., Ex. 30 at 185:23-25.) Mr. Pichai, like many other Google employees, never turned
 10 on his Chat history and instructed others to turn it off when discussing sensitive topics (which Google
 11 admits the agreement with Apple undoubtedly is). In one Chat, Mr. Pichai began discussing a
 12 substantive topic, and then immediately wrote: “also can we change the setting of this group to history
 13 off.” (Moskowitz Decl., Ex. 18 at -3593.) Nine seconds later, Mr. Pichai apparently attempted
 14 (unsuccessfully) to delete this incriminating message. (*Id.*) Chats from Google’s highest-ranking
 15 executive, including about the Apple agreement, would have been probative in this litigation, and their
 16 absence substantially prejudices Plaintiffs.

17 **II. A Permissive Adverse Inference Instruction Would Be Proportional.**

18 A permissive adverse inference instruction is an appropriate—even modest—remedy where, as
 19 here, a party intentionally and prejudicially destroyed an entire category of relevant evidence. *Radio*
 20 *City, Inc. v. Celestron Acquisition, LLC*, 2023 WL 5519324, at *4 (N.D. Cal. Aug. 25, 2023); *Apple*
 21 *Inc. v. Samsung Elecs. Co.*, 881 F. Supp. 2d 1132, 1149-51 (N.D. Cal. 2012); *Io Group, Inc. v. GLBT*,
 22 *Ltd.*, 2011 WL 4974337, *8, (N.D. Cal. Oct. 19, 2011). Courts in this district have recognized that
 23 the “[s]anctions levied for the destruction of evidence ‘should be designed to: (1) deter parties from
 24 engaging in spoliation; (2) place the risk of an erroneous judgment on the party who wrongfully
 25 created the risk; and (3) restore the prejudiced party to the same position he would have been absent
 26 the wrongful destruction of evidence by the opposing party.’” *Radio City*, 2023 WL 5519324, at *4
 27 (quoting *Apple*, 881 F. Supp. 2d at 1136). The intentional nature of Google’s conduct, combined with
 28 the pervasive nature of the destruction, make an adverse inference instruction appropriate. (See, e.g.,

1 Dkt. 468-6 (“[C]an I ask you to turn off history :?”); Dkt. 468-7 (similar.).)

2 A decision from this district involving less egregious facts is illustrative. In *Apple Inc. v.*
 3 *Samsung Electronics Co.*, the court found that Samsung committed a discovery violation where it
 4 “consciously disregarded” its obligation to preserve certain emails by failing to suspend an auto-
 5 deletion mechanism for certain custodians’ emails. 881 F. Supp 2d 1132, 1149 (N.D. Cal. 2012). The
 6 court explained that it was “mindful, however, that any sanction must be the least drastic available to
 7 adequately mitigate the prejudice Apple suffered.” *Id.* at 1150. The court determined that a
 8 permissive adverse inference satisfied that standard. It found that Apple suffered prejudice because
 9 “literally thousands of documents” were likely destroyed for certain custodians, and those custodians
 10 “are senior Samsung employees whose internal communications would have been especially probative
 11 to the claims at issue in this litigation.” *Id.* at 1150.

12 Here, Google went much further than Samsung. While Samsung likely destroyed “thousands
 13 of documents,” judging by the widespread preference among Google employees for off-the-record
 14 Chats, Google destroyed hundreds of thousands, if not millions. Moreover, unlike Samsung, Google
 15 intentionally directed and trained employees to use a certain medium for their most sensitive
 16 communications and then destroyed the entire category of relevant documents from that medium—*all*
 17 off-the-record Chats for *all* employees, including *all* custodians. And while the *Apple* plaintiff could
 18 have obtained some of the deleted emails from other sources (for example, other custodians who were
 19 copied on those emails), Plaintiffs do not have that safeguard here because there are no other sources.
 20 This means that, unlike in *Apple*, a significant component of the prejudice Plaintiffs suffered is that the
 21 Chats Google destroyed were likely to be among the most candid and sensitive conversations held by
 22 high-ranking Google employees, and they are unrecoverable and unavailable from any other source.

23 **III. Google’s Arguments Against an Adverse Inference Instruction Fail.**

24 Google has suggested that instead of ordering an adverse inference instruction, the Court
 25 should “let [Plaintiffs] put on some evidence, not a lot, but some evidence to the jury.” (8/3/2023
 26 Tr. at 68:12-15.) Google has also proposed that “if Plaintiffs establish that they have been prejudiced
 27 by a gap in the record . . . Google should be permitted to introduce evidence of its preservation
 28 practices and the circumstances of this case to explain why it did not act with the intent to destroy

1 unhelpful documents and that the jury should not infer that any such documents would have been
 2 helpful to Plaintiffs.” (Dkt. 429 at 15.) Google’s proposals ignore that these issues have already been
 3 litigated and decided. The Court found that Plaintiffs “certainly” proved prejudice, and that Google’s
 4 objection “that the prejudice is limited . . . is not well taken.” (Dkt. 469 at 18.) And the Court found
 5 that “the intentionality manifested at every level within Google to hide the ball with respect to Chat.”
 6 (*Id.* at 17.) Requiring Plaintiffs to present evidence regarding Google’s Chat destruction, in order to
 7 prove facts that they have already proven, would be no sanction at all and would force Plaintiffs to use
 8 their valuable trial time to retread the same ground that an instruction by the Court could cover. To the
 9 contrary, it would *reward* Google by forcing Plaintiffs to devote precious trial time to matters other
 10 than Google’s core anticompetitive conduct.

11 Further, discovery since Plaintiffs’ last submission on this topic has revealed that Google’s
 12 intentional destruction of relevant Chats is not an isolated instance of discovery misconduct, but rather
 13 is one facet of a pervasive corporate culture in which Google deliberately encourages its employees to
 14 shield evidence from discovery and instructs them how to do so. Every additional production by
 15 Google—including the production of Chats that the Court ordered Google to make as part of the Chats
 16 proceedings—exposed additional layers of intentional discovery misconduct.

17 For example, in a January 26, 2021 Chat, a Google in-house attorney described “an email
 18 thread where they [Google employees] looped me in for **fake privilege**.” (Moskowitz Decl., Ex. 14
 19 at -0332.) In a March 17, 2022 Chat, the same Google attorney stated that the creation of a new
 20 Google team will make her work easier, because that team will handle “**the fake**
 21 **privilege!**” (Moskowitz Decl., Ex. 23 at -0631.) In a May 19, 2022 Chat, a Google employee who
 22 was deposed in this case noted that Match had filed suit against Google, which prompted an employee
 23 to ask “[w]hat about prior documentation [of Match deals]? I.e. do we need to revise?”
 24 (Moskowitz Decl., Ex. 24 at -8223-24.) The employee was advised to “avoid anything written where
 25 possible” and told to make “no notes/emails/decks and make sure Legal is copied on everything.” (*Id.*)
 26 And in a January 8, 2021 Chat, a Google employee referenced a working document containing
 27 “sensitive” information, “like, what do we want to do with MSFT [Microsoft].” (Moskowitz Decl.,
 28 Ex. 13 at -7173.) Another employee decided to “go delete some sensitivie [sic] stuff” and “remind[]

1 people" to "communicate with care," as per Google's training. (*Id.* at -7173-74.)

2 These documents show that Google's culture of destroying and concealing evidence to protect
3 Google pervaded the entire company and extended well beyond destroyed Chat evidence. As a result,
4 Plaintiffs have been deprived of even more evidence than the Chat hearings exposed.

5 * * *

6 A permissive adverse inference instruction would go no further than is needed to address the
7 serious harm caused by Google's conduct. At the start of trial, the Court should instruct the jury of the
8 facts surrounding Google's Chat destruction, and at the end of trial it should instruct the jury that it
9 may, if it chooses, infer that the evidence Google destroyed would have been harmful to Google's case
10 and helpful to Plaintiffs' cases.

11 Plaintiffs therefore respectfully request that the Court order the adverse inference instruction
12 attached as Exhibit A.

13
14
15 Dated: September 21, 2023

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EXHIBIT A

Before this trial began, the Court ruled that Google intentionally destroyed relevant evidence.

In reaching that conclusion, the Court found the following facts.

1. Google employees use Google Chat every day to discuss a variety of topics, including substantive business issues, including matters relevant to this antitrust litigation.

2. In the ordinary course, Google automatically deletes all private (1-on-1) and group Chats 24 hours after they are sent unless the Google employee manually turns on Chat history. Such messages are referred to within Google as “off the record” or “History Off” Chats.

3. Google instructed employees in trainings entitled “Communicate with Care” about strategies for seeking to make their written communications “protected by the attorney-client privilege,” even when this status was not accurate.

4. Google employees were trained that because Google is in the public eye and courthouse, chatting “off the record” is sometimes better than email. The Court found evidence that Google employees regularly divert sensitive topics to Chat, and that Google employees are aware that their Chats are generally not preserved.

5. Beginning no later than the filing of this lawsuit on August 13, 2020, Google had a legal obligation to preserve evidence, including Chats.

6. Google chose not to comply with that obligation. Even though Google could have preserved Chats using technology readily available to it, Google chose not to.

7. Google also did not check to see if custodians—Google employees whose documents were turned over to Plaintiffs in this case—were actually preserving relevant Chats as directed by the litigation hold notice.

8. As a result of Google's misconduct, Chat messages relevant to this case were systematically destroyed every 24 hours and cannot be recovered or restored. You therefore will not see all the evidence that is relevant to this case.

9. You may infer that Chat messages destroyed by Google would have been unfavorable to Google in this case.

E-FILING ATTESTATION

I, Lauren A. Moskowitz, am the ECF User whose ID and password are being used to file this document. In compliance with Civil Local Rule 5-1(i)(3), I hereby attest that each of the signatories identified above has concurred in this filing.

/s/ Lauren A. Moskowitz

Lauren A. Moskowitz

Exhibit A2

Public Redacted Version

EXHIBIT 2



Project Banyan

Phase 1: Ecosystem Overview

WORK IN PROGRESS

Privileged and Confidential
Feb 2019



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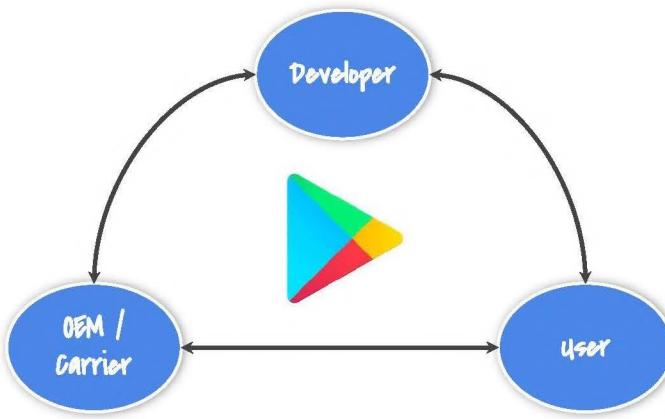
Agenda

1. Project scope and milestones (including exec meeting cadence)
2. Overview of recent ecosystem events
3. Proposed list of scenarios
4. Initial scenario analysis (in-progress)

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Wendy

Play succeeds only when our partners succeed and find ongoing compelling value with us



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3

Yooki

Existential Question

How do we continue to keep Play as the preeminent distribution platform for Android?

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4

Yooki

Three major milestones to agree on (1) scenarios to deep-dive, (2) overall response strategy, and (3) specific initiatives by mid Q2

What are the bigest risks to Play's value proposition to partners?

Identify the **needs** of developers, OEMs, carriers, and users that Play doesn't meet, and **assets** that potential players¹ bring to app distribution

Identify the **most likely scenarios** for alternative app distribution, including **financial feasibility** of each

Milestone 1: Agree on most likely scenarios for deep-dives

In progress, targeting late Feb/early March

What should be our priorities to address these risks?

Evaluate the **outcome** and **impact** (economic & strategic) of the most likely scenarios

Identify the major **levers** to address the risks in the scenarios

Prioritize these levers and develop a high-level **strategy**

Milestone 2: Agree on the highest-impact levers and a high-level response strategy

ETA: ~end of March

What initiatives should we prioritize for 2019?

Identify **existing & new initiatives** to implement the strategy

Evaluate and prioritize initiatives based on **feasibility** and **impact**

Milestone 3: Agree on a response plan (initiatives to kick off or expand)

ETA: ~end of April

¹ Out of scope: MSFT launcher since this trend is not a Play specific issue, Subscriptions (e.g. Netflix) given their workarounds for Play billing are being addressed separately by Play team

Yooki

Major deliverables by milestone

Milestone 1: Agree on most likely scenarios for deep-dives

In progress, target late Feb/early Mar

Ecosystem players analysis (OEM, Carrier, developers, users, others e.g. Amazon) - Needs, assets, economics (where relevant)

Scenario enumeration and modeling
- how each scenario plays out, and why it would happen

Preliminary analysis for discussion today

Recommendation of most likely scenarios for further deep-dives

Milestone 2: Agree on the highest-impact levers and a high-level response strategy

ETA: ~end of March

Impact analysis of most likely scenarios, including strategic and economic implications for Play

Enumerate available levers for counteracting or mitigating impact of scenarios & criteria to evaluate them

Recommended strategy based on prioritized levers to address the highest-impact risks

Milestone 3: Agree on a response plan (initiatives to kick off or expand)

ETA: ~end of April

Current or potential new initiatives to implement the recommended strategy

Impact and feasibility analysis of available initiatives, including high-level timelines and resourcing needs

Recommended initiatives for 2019H2 and beyond

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6

Yooki

Stakeholders and updates

Sponsors

Jamie Rosenberg, Sameer Samat

Every ~4 weeks for
milestone reviews

Steering Team

Paul Gennai, Tian Lim, Mike Hochberg, Shafiq Ahmed, Purnima Kochikar, Sri Krishnamachari

TBC: every ~2 weeks
for progress reviews
and input as needed

Working Team

Strategy	BizOps	Analytics	Finance	Play BD	Product	Eng
Atul K Tim M	Stephen K Wendy L	Jon G Sonia L	Mary O Josh O	Lawrence K Mike M	Matt H	TBD

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7

Yooki

Questions:

Timing for Jamie / Sameer meeting (will need help from Paul)

Try to have as needed meeting with Steering team

Critical Strategic Initiatives: Project Hug and Project Banyan

Initiatives necessary to sustain Google Play growth and provide value to key constituencies in 2019 and beyond

	Project Hug	Project Banyan
Context	<ul style="list-style-type: none"> Today's mobile game devs have new and different needs from the mobile devs of five years ago Some mobile devs are questioning the value of Google Play as a distribution partner; considering alternatives 	<ul style="list-style-type: none"> Google Play is facing increased competition from app store rivals and other distribution channels (OEMs, carriers), causing fragmentation & mindshare loss Meanwhile, some partners are applying price pressure and experimenting with direct distribution models
Key Questions	<ul style="list-style-type: none"> What are the new needs of today's mobile game devs? How can Google Play help with those needs beyond traditional value-add (reach, security)? In what ways we expand our xGoogle value proposition to mobile devs who are increasingly asking for it? 	<ul style="list-style-type: none"> What are some future scenarios that would challenge Google Play's continued growth as the leading Android app store? What are the driving forces? What is the impact? How could Play prepare for these possible futures by changing its product or business model?
Outputs, Outcomes?	<ul style="list-style-type: none"> Priority game developer segments and needs x-PA commercial programs to enhance Google's gaming value proposition Timeline: execute in 1H 2019 (pilots underway) 	<ul style="list-style-type: none"> Scenario definition with underlying motives, levers and tactics Prioritized Play product and commercial changes for different constituencies to address fragmentation Timeline: Start execution in H2 2019 - H1 2020

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Tim

Recent developments: Ecosystem partners are investing in Game Distribution + exclusive content acquisition; key developers are evaluating options

STORE		GEO FOCUS	ACTIVITY	DETAILS
Mobile	OEM	Samsung	Global	<ul style="list-style-type: none"> 70/30 standard rev share, 80/20 rev share for select partners Aggressively pursuing exclusive deals with major Android game developers (e.g. \$40M for exclusives from Niantic) Investing via direct payments, silicon optimization, and or DevTech resources Galaxy store on device home screen for S10 line
	Carrier	One Store	Korea	<ul style="list-style-type: none"> 80/20 revenue share (originally 70%) More IAP promotions Titles listed on OneStore automatically co-listed on Samsung Store
	Platform	Epic Store	Global	<ul style="list-style-type: none"> 88/12 rev share (likely) for new Android game store, based on rev share on PC Building dev credibility via Fortnite success and Unreal Engine brand Fortnite MAUs / downloads on Android was subpar (technical issues) Secured few exclusives
		Amazon App Store	Japan	<ul style="list-style-type: none"> Latent risk: stable MAU / catalog coverage, no major exclusives or new EoY promotions; ~15-20% IAP discounts
PC / Console	Steam (Valve)	Steam (Valve)	Global	<ul style="list-style-type: none"> 3-tiered graduated rev share: 70/30 (<\$10M), 75/25 (\$10-50M), 80/20 (\$50M+) Lost some titles to Epic Store
	Discord	Discord	Global	<ul style="list-style-type: none"> 90/10 rev share; self-publishing game platform Some 90d exclusive indie titles and monthly game subscription service

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Tim

Major working hypotheses & assumptions guiding our scenarios (1/2)

FOR DISCUSSION

Ecosystem players

OEMs

- **Samsung is the only OEM** with sufficient share to plausibly build its own store in key Play markets (71% share¹ of premium Android (\$600+) in top 10 Play countries)
- **Chinese OEMs lack sufficient share** today in Play markets to be an immediate concern outside China, but are a long-term consideration

Carriers

- **Carriers stores would have limited appeal to global developers** – but carriers may play a role in pre-install of other (OEM, developer, or 3P) stores

Developers

- **Major games with strong existing user bases are the likely driver of any new distribution platform** (top 10 devs ~25% of Play app & game revenue)
- **Biggest concern are AAA / Hi-Fidelity games or geographic-focused games** where Play's value proposition is weakest (~62% top AAA games² spend on Samsung devices, NCSoft / Mixi have 98% spend in KR / JP)
- **Other popular app categories lack a strong incentive to pursue alternative distribution**

1) Based on IDC last 24 months unit sales (2017-2018) 2) Based on set of 15 representative hi fidelity, hi spend games

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Atul

AAA, Hi Fidelity games are most likely, because Play's broad Android reach is less helpful to these games (e.g. focus on high-end devices for XX% revenue)

Casual games are less likely drivers as Play's broad reach is more important (only XX% revenue on high end devices)

Major working hypotheses & assumptions guiding our scenarios (2/2)

FOR DISCUSSION

Ecosystem players

Users

- Users would **switch to a new distribution channel** only with a **strong draw - exclusive, high-profile titles, and/or sustained pricing advantage**
- Users would **stay on on alternative channel** with better pricing (discounts, loyalty programs), a sufficiently strong catalog over time, and transferability to new devices

Other 3P platforms

- **Amazon and MSFT are best positioned 3Ps** to disrupt games distribution with existing assets (Prime, Twitch, XBox), 1P titles (for MSFT e.g. Minecraft, Halo) and willingness to invest

Macro trends

Emerging technology

- **5G**: Significant improvement in bandwidth and latency opens up new distribution channels
- **Cloud Streaming**: could disrupt game distribution by bringing console/PC games to mobile and enabling more cross-platform experiences

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Atul

AAA, Hi Fidelity games are most likely, because Play's broad Android reach is less helpful to these games (e.g. focus on high-end devices for XX% revenue)

Casual games are less likely drivers as Play's broad reach is more important (only XX% revenue on high end devices)

Carriers
US

Single Country: Verizon

Multi-country: T-Mo (deutsch telecom), Sprint (Softbank), AT&T (owns some Latin American Telcos)

Japan (3 carriers own 85% of market)

NTT (some small overseas stakes, but mostly Japan)

KDDI (Mostly Japan)

Softbank (Lots of holdings in many tech companies, but Sprint is only telco)

Korea

SK Telcom (has subsidiaries in China and Vietnam)

LG (no overseas telcom)

KT (has some small subsidiaries in mongolia and a few eastern european countries)

Scenarios list *FOR DISCUSSION*

	<i>Scenarios</i>	<i>Key assumptions // Likely players</i>
OEM	1 Samsung app store goes big with exclusive AAA games, building a gaming distribution platform	<ul style="list-style-type: none"> OEMs invest in exclusivity to gain user base for store & future rev share
Developers	2 Major gaming platforms builds a store with titles from multiple developers	<ul style="list-style-type: none"> Epic Games, Steam, Tencent build mobile stores
3P platforms	3 AAA gaming developer goes direct through side- or pre-loading	<ul style="list-style-type: none"> Riot, Tencent, Activision, EA go direct
Carriers	4 Amazon or Microsoft launches a complete gaming platform with distribution	<ul style="list-style-type: none"> AMZN/MSFT drive uptake w/ exclusives & streaming Longer-term, AMZN builds out a complete app catalog
Other / multiple	5 OneStore goes big in Korea — inspiring carriers in JP and US to duplicate	<ul style="list-style-type: none"> Likely driven by major US or JP carriers — biggest Play markets
	6 Carriers drive streaming distribution — move high end gaming off Play to the Cloud	<ul style="list-style-type: none"> Carriers package game streaming with 5G network rollout (e.g., PlayGiga model, VZN cloud gaming)
	7 Multiple alternatives stores emerge, and significantly erode the Android user experience	<ul style="list-style-type: none"> Multiple stores create fragmentation and user / developer confusion

Note: Focusing on Top 3 + Next 7 Play markets (64% + 18% rev in 2018); NBU/BR/IM strategy is out of scope

AC PRIVILEGED // REFLECTS LEGAL ADVICE

Atul

Scenario 1: Samsung goes big w/exclusives to build successful Galaxy Store

PRELIMINARY – for discussion.

Underlined assumptions discussed on next page

Challenging to see Galaxy Store becoming attractive enough to developers to be a successful, sustainable stand-alone business

- To bootstrap adoption, need to spend [REDACTED] to buy [REDACTED] exclusive rights to [REDACTED] per year
- Would need to offer [REDACTED] revenue share (better than Play, but room to make margin)
- Need to believe that exclusives would build a user base loyal to the Galaxy Store (sufficient to drive [REDACTED] of Samsung device consumer spend for co-listed apps to Galaxy store)
- Need to believe user base and rev-share attract 50 of top 100 games to co-list on the Galaxy store - challenging; is [REDACTED] in annual benefit sufficient to entice developers to co-list?
- Net-net: successful store would yield margins of [REDACTED] in long run for Samsung to offset [REDACTED] net investment¹ for first 2 years

Samsung could use game exclusives to drive hardware sales, but this would not hinge on building a sustainable game distribution business

1) Net investment net revenue share less exclusivity payments

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Stephen

50 of 100 games selected given is sufficiently big enough to be of note to Play, while still be plausible

Scenario 1: Key assumptions and model output

Phase 1
3 exclusive titles
to bootstrap the
Galaxy store

Phase 2
Galaxy Store
with 50 co-listed
games

Net impact to
Samsung

- [REDACTED] exclusivity payment per title
 - \$9M: foregone revenue from missing 2mo of revenue on non-Samsung devices
 - \$12M: max Samsung could pay to breakeven on the store in 4 years
- [REDACTED] exclusive titles for [REDACTED]: each title brings XM users and 20% of consumer spend, building a base large enough to attract users in Phase 2 (**in progress*)
- [REDACTED] revenue share: to be sustainable long term, Samsung's revenue share needs to be more than their 15% store operations cost (assume same as Play)
- [REDACTED] of consumer spend of the 50 co-listed games on Samsung Devices moves to Galaxy Store: one known high profile game currently co-listed in Korea (Black Desert), finance estimates 5-20% user shift
- [REDACTED] revenue upside from co-listing for each of 50 games
 - [REDACTED] average annual consumer spend on a Top 100 game on Play
 - [REDACTED] of consumer spend for these games on Samsung devices
 - [REDACTED] of consumer spend on Samsung shifts to Galaxy store from Play
 - [REDACTED] better revenue share on Galaxy store vs. Play (*assuming Play doesn't move from 70/30*)
- Phase 1 (2 year investment): + [REDACTED] rev share - ([REDACTED]) exclusivity payment - [REDACTED] to operate the store = [REDACTED] investment per year x 2 years = [REDACTED]
- Phase 2 Profits: [REDACTED] revenue share - [REDACTED] cost to operate the store = [REDACTED] / yr profit

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Stephen

Appendix I

Ecosystem needs and assets

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Ecosystem Review: Device OEMs

Unmet needs / motivation to pursue a Play alternative	Scenario implications
<ol style="list-style-type: none"> 1. Differentiated software experience (e.g. exclusive apps) to help turnaround slowing hardware sales 1. New revenue streams via apps & services to offset slowing hardware sales 	<p>Strong incentive for OEMs to act for both differentiation and service revenue</p>
<p>Assets OEMs bring to a Play alternative</p> <ol style="list-style-type: none"> 1. Distribution power via base of installed devices, ability to set pre-loads and push updates 2. Technical capabilities to optimize apps & hardware, esp. for high-end games 3. Brand power & marketing investment, e.g. Samsung co-marketing with Fortnite, esports sponsorships 4. Existing app stores for local OEMs in China, Samsung 5. (Limited) User FoP e.g., Samsung Pay 	<p>Strong opportunity for major OEMs to act - have the pieces needed for either <u>direct distribution</u> of select apps (e.g. Fortnite) or a broader <u>app store offering</u> (e.g. Samsung store)</p>

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Ecosystem Review: Developers

Unmet needs / motivation to pursue a Play alternative

1. Developers would **prefer a better revenue share** and do not always feel that Play (or Apple) justify their 30% share - esp. those with large existing fan bases (e.g. AAA games) or limited global ambitions
1. Developers have product & technical needs to support the development lifecycle [details [here](#)]

Scenario implications

Developers who see the **least benefit** from Play's global distribution and discovery have **biggest incentive** to seek cheaper alternatives - in particular, AAA games (focus of Project Hug)

Games developers also have **significant technical needs** that are not well-met by Play/Google offerings (e.g. LiveOps support)

Only select developers with **committed audiences** likely to forgo Play distribution entirely.

[TBD] Developers have limited incentive to tackle complexity of **co-listing** in alternative stores unless they have significant reach

Assets Developers bring to a Play alternative

1. **Developers own IP** (apps, games, rights to franchises) – that users spend **money and time consuming**
1. **Small number of developers with the "best IP"** – the most desirable content with the most devoted fans, who will overcome significant barriers to get that IP

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Ecosystem Review: Other 3P Platforms

Motivation to pursue mobile app/game distribution

1. **Amazon:** known interest in gaming (twitch, lumberyard), desire to **expand Prime ecosystem**, existing app store
1. **Microsoft:** Existing **gaming strength** (Xbox, PC), desire to **expand desktop services portfolio** to mobile (e.g., Bing)

Assets Developers bring to a Play alternative

1. **Bring exclusive 1P IP** (MSFT Office, Minecraft, Halo)
1. Enable unique **integrations with 1P platforms** (Prime, Twitch, Xbox)
1. Influence OEMs with access to **new device sales channels** (Amazon.com, MSFT Enterprise Sales)
1. Integration or discounts on **development platforms** (AWS, Lumberyard, Azure)
1. Deep pockets and willingness to invest

Scenario implications

Other 3P platforms have **compelling assets and deep pockets** to try to disrupt app/game distribution on Android...

...but **both have tried – and failed** – to do so in the past, but recent changes create opportunity:

- Openness of potential OEMs or Developers to partner
- Relative strength of platforms (e.g. complete gaming stack)
- Technology shifts (e.g., streaming, 5G, cloud)

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Ecosystem Review: Carriers

Unmet needs / motivation to pursue a Play alternative	Scenario implications
<ol style="list-style-type: none"> 1. Increase subscriptions or subscription prices with exclusive / differentiated apps 1. New revenue streams via apps & services 	<p>Carriers in markets with significant Play revenue and strong carrier presence in device retail in best position to pursue app distribution</p> <ul style="list-style-type: none"> • Carriers in Korea, Japan, and US best positioned (e.g. Onestore)
<p>Assets Carriers bring to a Play alternative</p> <ol style="list-style-type: none"> 1. Connection to the user <ol style="list-style-type: none"> a. FoP/DCB: Carriers have a billing relationship w/users b. Influence of user's device purchase decision at POS in store & online (e.g., merchandising, commissions) 1. Influence over the OEM: Pre-loading of carrier apps & app stores negotiated in commercial agreements w/OEMs 1. Influence over the Developers: Network control & paid prioritization could potentially impact developers ability to serve their apps to users 	<p>Carriers would still need to strike deals with OEMs to pre-install stores - but some could offer developers broader reach than a single OEM</p>

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Appendix II

Scenario analysis

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Scenario 1: Baseline assumptions driving the model

Assumption	Phase 1: 3 Exclusives	Phase 2: 50 co-listed games	Comment
Months of exclusivity for exclusive Samsung games	■	■	Moderate length exclusive to line up with critical first few months of a hardware launch
Number of exclusive games per year	■	■	Phase 1: Data request out to Play Analytics to validate Phase 2: No exclusives anymore — Galaxy store is self-sustaining
Share of consumer spend on top games on Samsung devices	■	■	Average of today based on representative apps. This is correlated with general market share of devices and would take time to shift
Share of consumer spend on Top 100 games on Samsung devices	■	■	Based on top 100 apps today. This is correlated with general market share of devices and would take time to shift
Galaxy store revenue share with devs	■	■	Assume it needs to be better than Play
Galaxy store revenue share for Samsung	■	■	Needs to be higher than 15% cost to operate the store
Galaxy Store share of Samsung device spend when exclusive	■	■	Game is exclusive — Galaxy store should get all of the spend
Galaxy Store share of Samsung device spend when co-listed	■	■	Based on high end of experience today of 5-20% for game Black Desert which is co-listed on Galaxy store for Phase
Number of top 100 titles co-listed on Galaxy store	■	■	Phase 1: Focus mostly on exclusives — little other developer co-listing Phase 2: Significant co-listing among top 100 apps
Cost to operate the store as percent of store revenue	■	■	Based on number of Play finance

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Yooki / Stephen

Scenario 1: Modest phone sales increases could fund Galaxy store investments, but unclear if exclusives or a store can affect units sales

**Context: Samsung Premium phone (>\$700) sales
2018 were 57M units (ex-China)**

Incremental Annual Unit sales	Incremental Units	Incremental Gross Profit for Samsung ¹
0.5%	295K	\$75M
1.0%	590K	\$150M
1.5%	885K	\$225M

If Galaxy store exclusives and/or store loyalty can help drive small incremental phone sales vs. Samsung baseline – could easily be worth \$100M+ per year

1) Assume ASP of \$853 (average of GS9, GS9+, Note 9) and Gross Margin of 30%
Reference: [OEM market share analysis](#)

However, unclear at this time if:

- Exclusive titles would be able to drive such an increment
- The additional effort in building a successful store would make a difference

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Appendix III
Ecosystem factpack - [link](#)

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Appendix IV

Play business context

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Context: Overview of revenue concentration

<p>Geo</p> <table border="1"> <tr><td>Q4-18</td><td></td></tr> <tr><td>Play (non-Ads)</td><td></td></tr> <tr><td>Rev. \$M:</td><td></td></tr> <tr><td>y/y:</td><td></td></tr> <tr><td>Growth Contr. to Rev.:</td><td></td></tr> <tr><td></td><td></td></tr> </table>	Q4-18		Play (non-Ads)		Rev. \$M:		y/y:		Growth Contr. to Rev.:				<p>Buyers</p> <table border="1"> <tr><td>Q4-18</td><td></td></tr> <tr><td>IAP Spend \$M</td><td></td></tr> <tr><td>y/y</td><td></td></tr> <tr><td>Growth Contr. to IAP Spend.:</td><td></td></tr> <tr><td></td><td></td></tr> </table>	Q4-18		IAP Spend \$M		y/y		Growth Contr. to IAP Spend.:			
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IAP Spend \$M																							
y/y																							
Growth Contr. to IAP Spend.:																							
<p>Developer</p> <table border="1"> <tr><td>Q4-18</td><td></td></tr> <tr><td>A&G Rev. \$M:</td><td></td></tr> <tr><td>y/y:</td><td></td></tr> <tr><td>Growth Contr. to Rev.:</td><td></td></tr> <tr><td></td><td></td></tr> </table>	Q4-18		A&G Rev. \$M:		y/y:		Growth Contr. to Rev.:				<p>Top</p> <table border="1"> <tr><td>Q4-18</td><td></td></tr> <tr><td>IAP Spend \$M</td><td></td></tr> <tr><td>y/y</td><td></td></tr> <tr><td>Growth Contr. to IAP Spend.:</td><td></td></tr> <tr><td></td><td></td></tr> </table>	Q4-18		IAP Spend \$M		y/y		Growth Contr. to IAP Spend.:					
Q4-18																							
A&G Rev. \$M:																							
y/y:																							
Growth Contr. to Rev.:																							
Q4-18																							
IAP Spend \$M																							
y/y																							
Growth Contr. to IAP Spend.:																							

*Actuals up to 12/31/2018

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Context: Play user-funnel

█ of Play connected devices actually buy on Play

Google

26

FOP: Forms of Payment

A&G: Apps and Games

Store browsers: people who open the play store

Acquirers: people that download apps from the play store

WIP Slides - [link](#)

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Exhibit A3

Public Redacted Version

EXHIBIT 3

**Boosting Top Game Developer Support
&
Securing Play Distribution on Samsung Devices**

April 9, 2019

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CONTENTS

Executive Summary

Context & Mobile Gaming Trends

Risks

Program Proposals

1. Top Game Developers
2. Samsung

Financial Summary

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Proposal Summary: Two programs deployed in conjunction

Cross-Google Service Packs + Partner Pods

- Ensure top developers distribute on Play
- Accrue value back to Google

Samsung + Google Gaming Collaboration

- Motivate Samsung to prioritize Play
- Improve gaming experience & security on Android

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Both programs are needed

Need to invest in top devs now to ensure imminent launches happen on Play and reduce noise

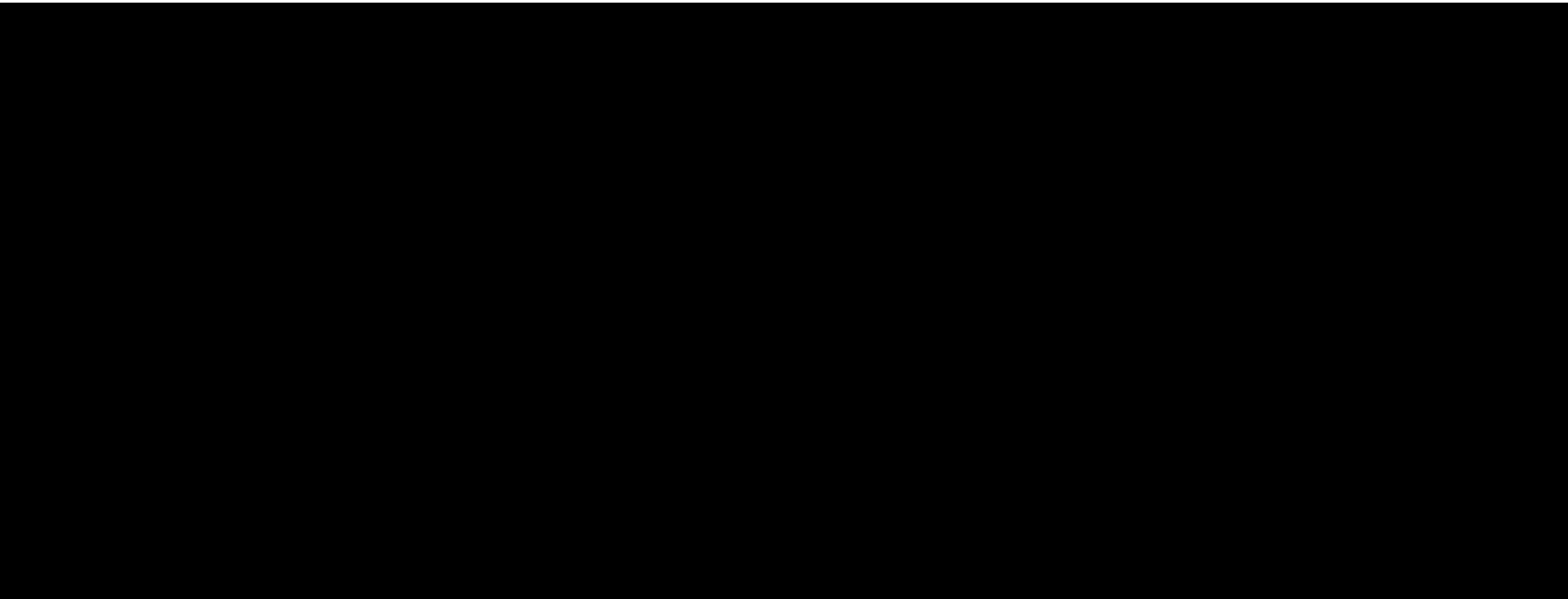
Samsung is aggressively pursuing gaming, and indicated they're open to partnering with us (but a deal will take time to negotiate and implement)

Note: We're also beginning to explore ways to reduce 'app store tax' sentiment across the developer ecosystem, via new business model concepts

Context

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Play's business is concentrated among top developers, and on Samsung devices



The loss of top developers, either to competitors or by
'going-it-alone' on Android, would significantly impact Play's business

**Tencent investment*

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- HVUs: █ of buyers spend █ of app & game spend
- Samsung concentration of █ reflect 2018 actuals. Concentration is even higher in few key Play markets, eg, KR

Recent ecosystem trends

Competitors Aggressively Pursuing Gaming



- Homescreen icon on S10
- **20% rev share**
- Pursuing top tiles (exclusives and co-list)



- Launching app store in 2019/20
- **12% rev share (on PC)**
- New \$100M developer fund (no strings)
- Pursuing **exclusive content** & winning on PC



- **20% rev share**
- Allows 3P billing (**5% rev share**)
- Partnered w/ Samsung in KR



- Funding in-app purchase discounts (up to 20%) to attract users

"App Store Tax" Meme Emerging

Apple and Google Face Growing Revolt Over App Store 'Tax'

Opinion: Google's 30% cut of Play Store app sales is nothing short of highway robbery



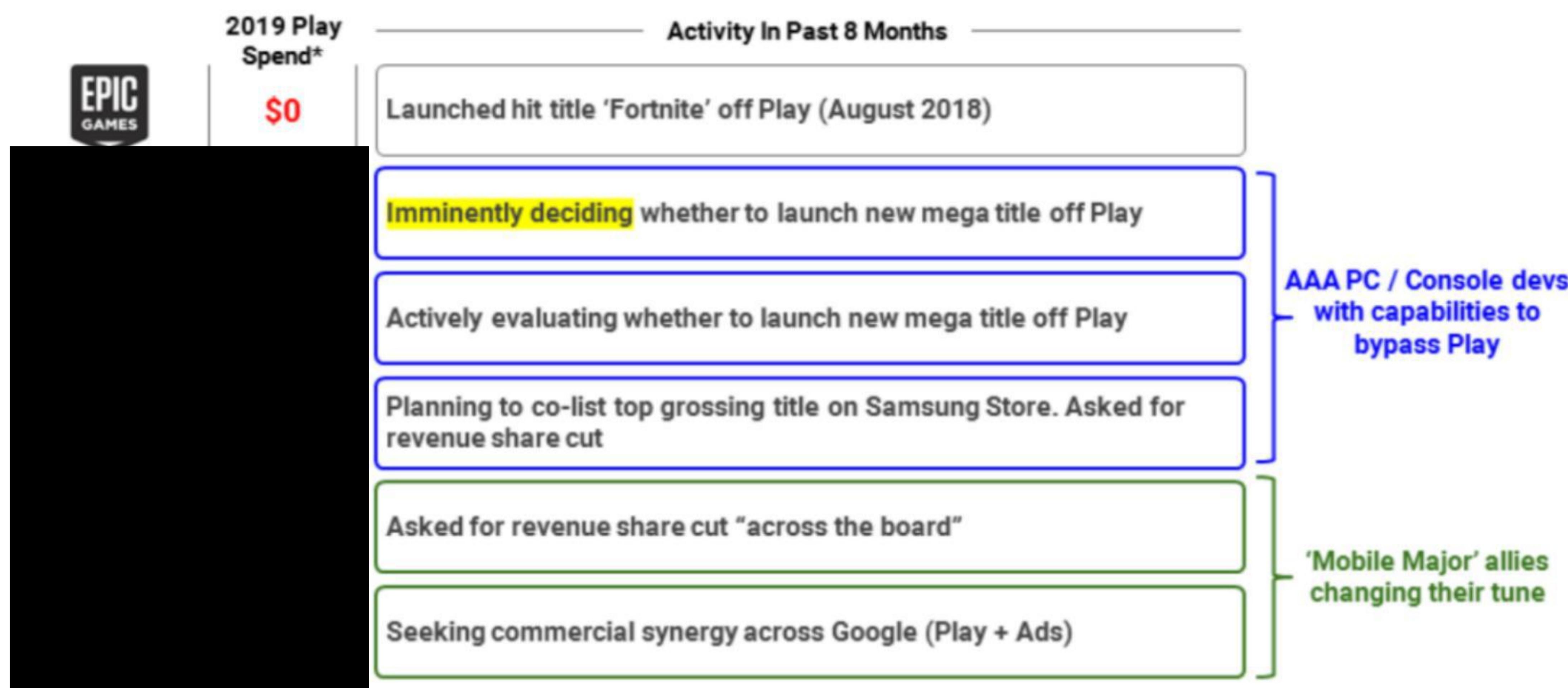
APPLE IMPOSES A DISCRIMINATORY 30% TAX

Apple taxes competitors to advantage their own services

*Tencent investment

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Major developers are increasingly considering distribution off Play. They also express discontent over Play rev share, and lack of unified Google offers / support



*Projected [REDACTED] spend projection is for 2020

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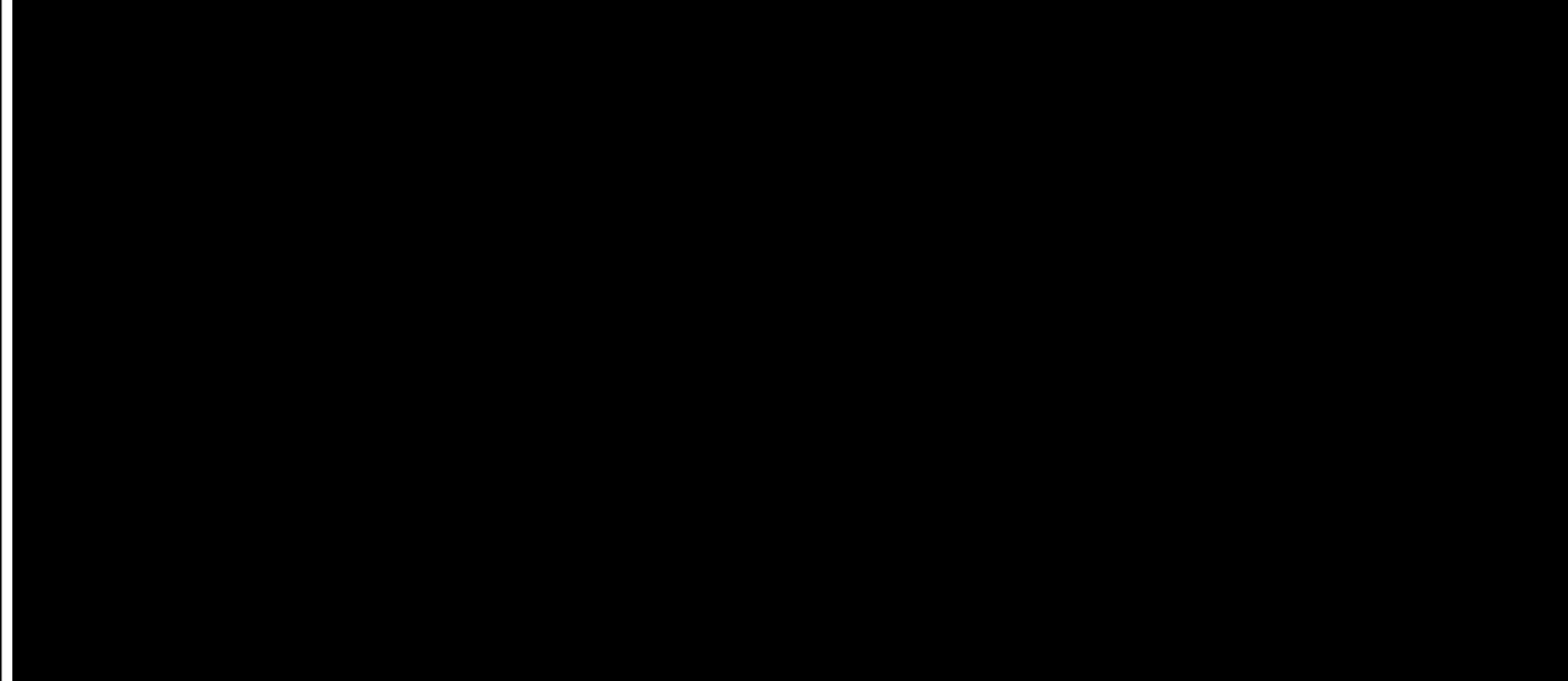
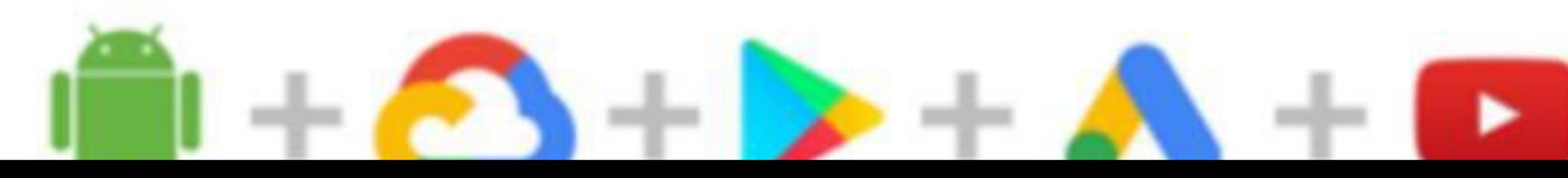
TWO PROPOSALS

Top Developers

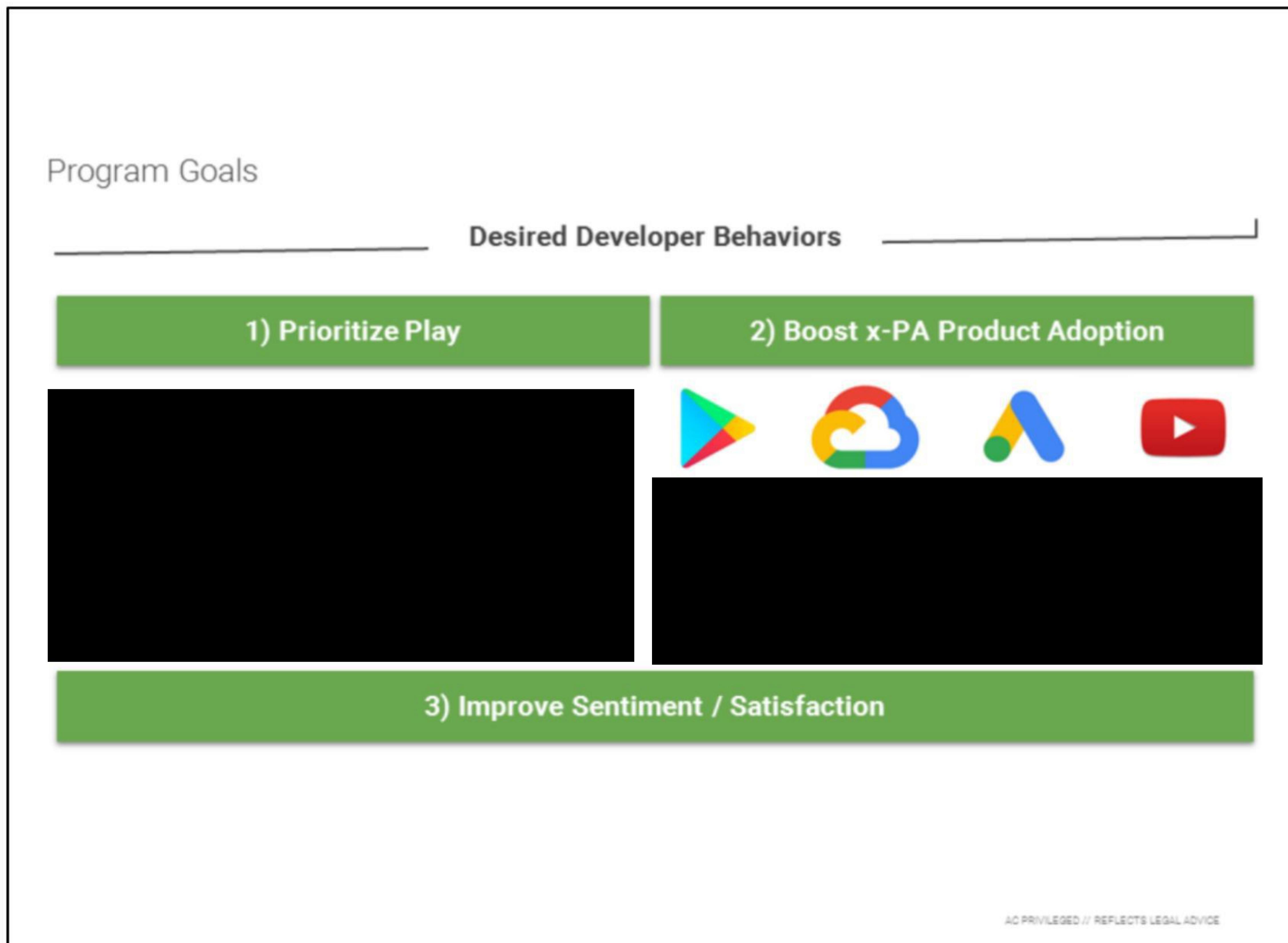
Samsung

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Proposal: Unify and boost Google's value proposition to target developers, via expanded offers and service level

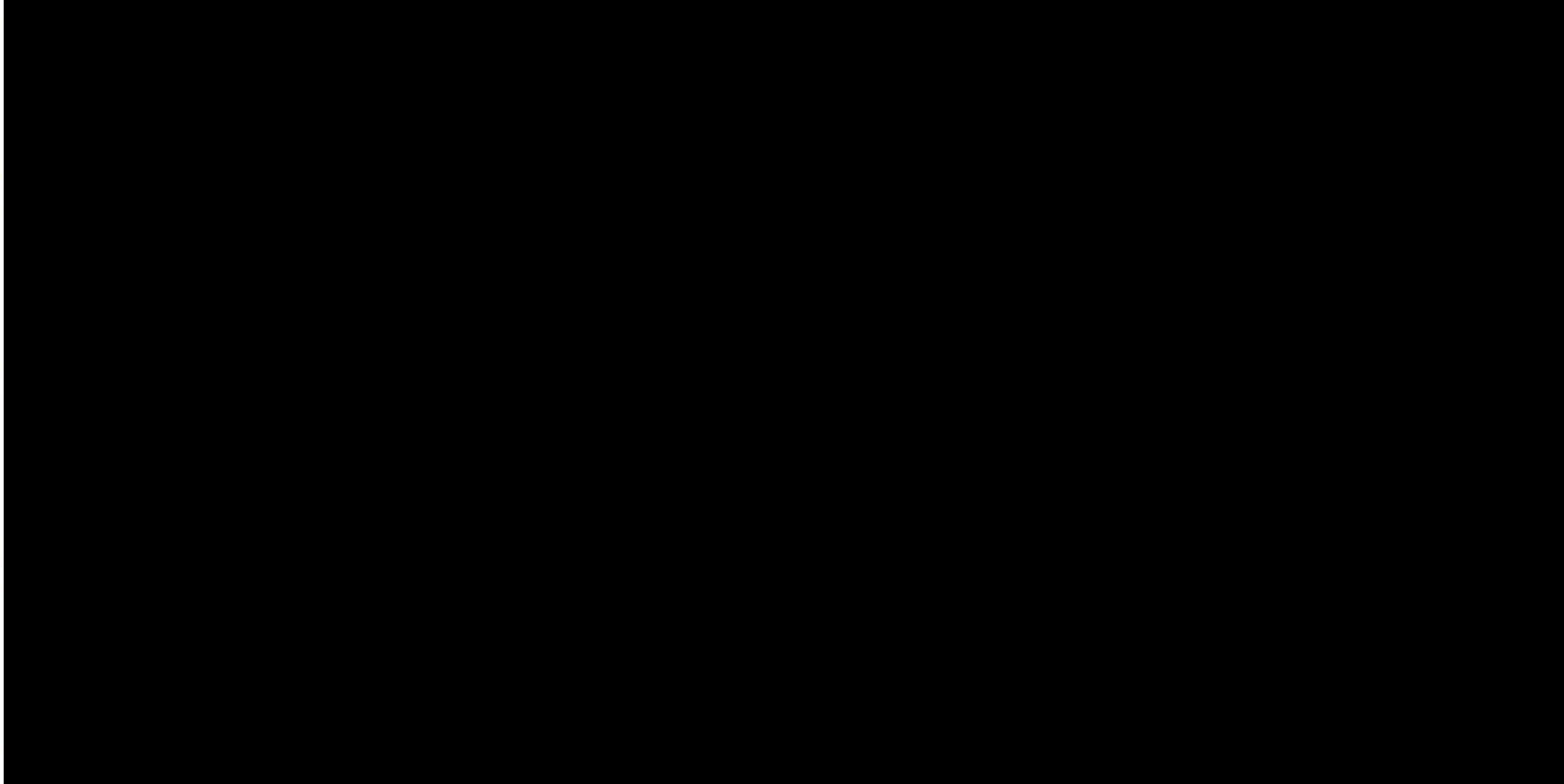
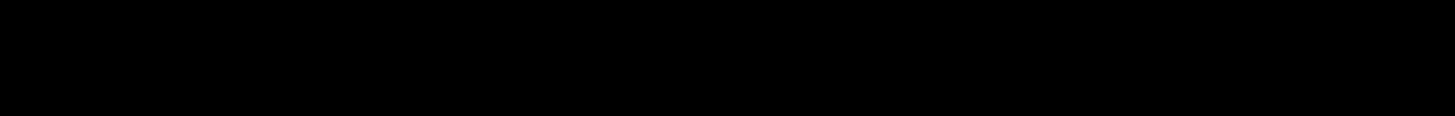


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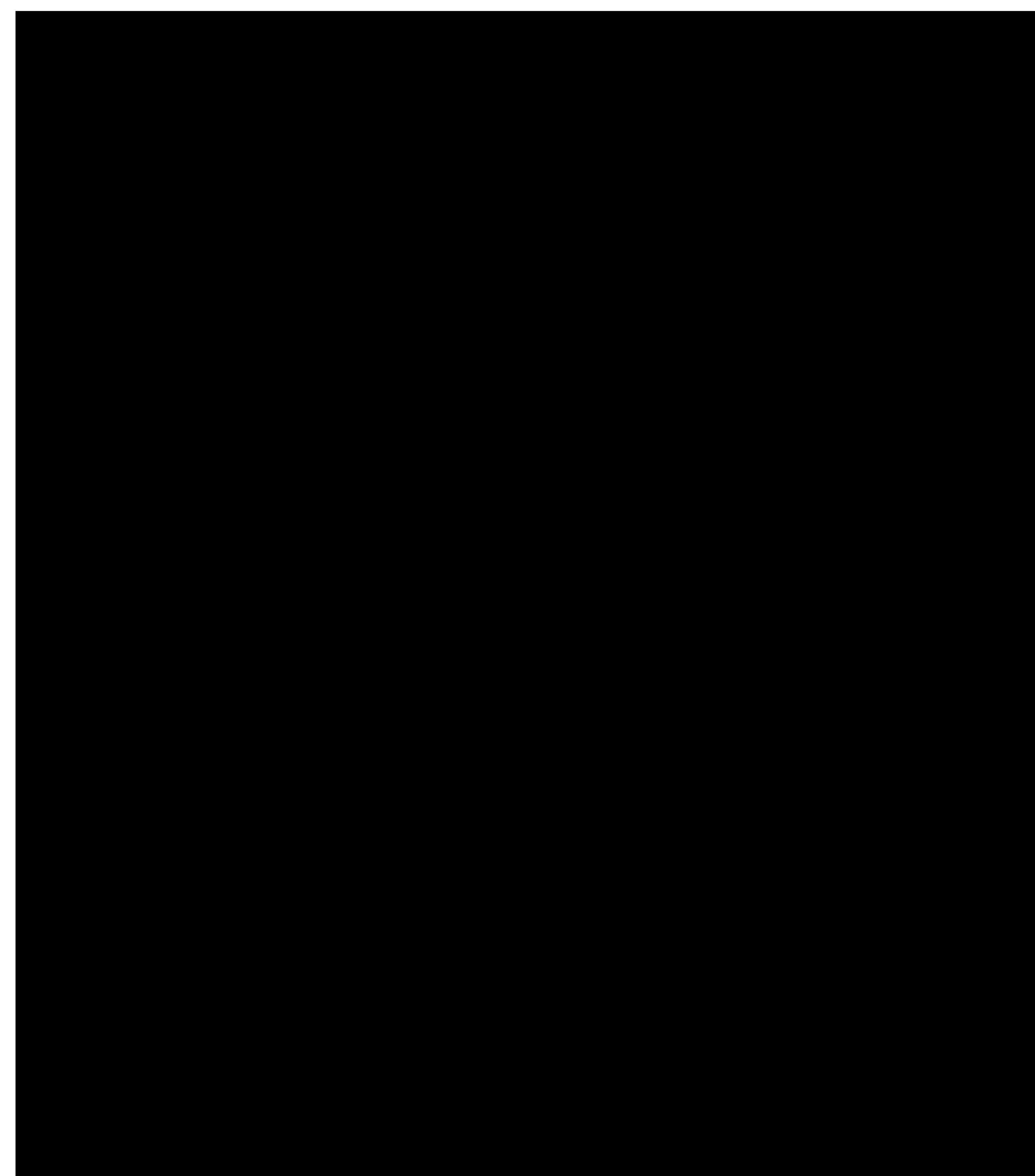
Improve sentiment about (1) Play revenue share, (2) building high-fi games for Android, and (3) Google's gaming value proposition
Android: reduced app distro fragmentation

Cross-Google Service Pack Offering (Program Details & Asks)

Offer to Developer	Primary PA Success Metric
	

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Target Developers



Drive disproportionate value to Google
(\$8B 2019 Play Spend projected; \$XXX-PA rev)

Beacons of the ecosystem

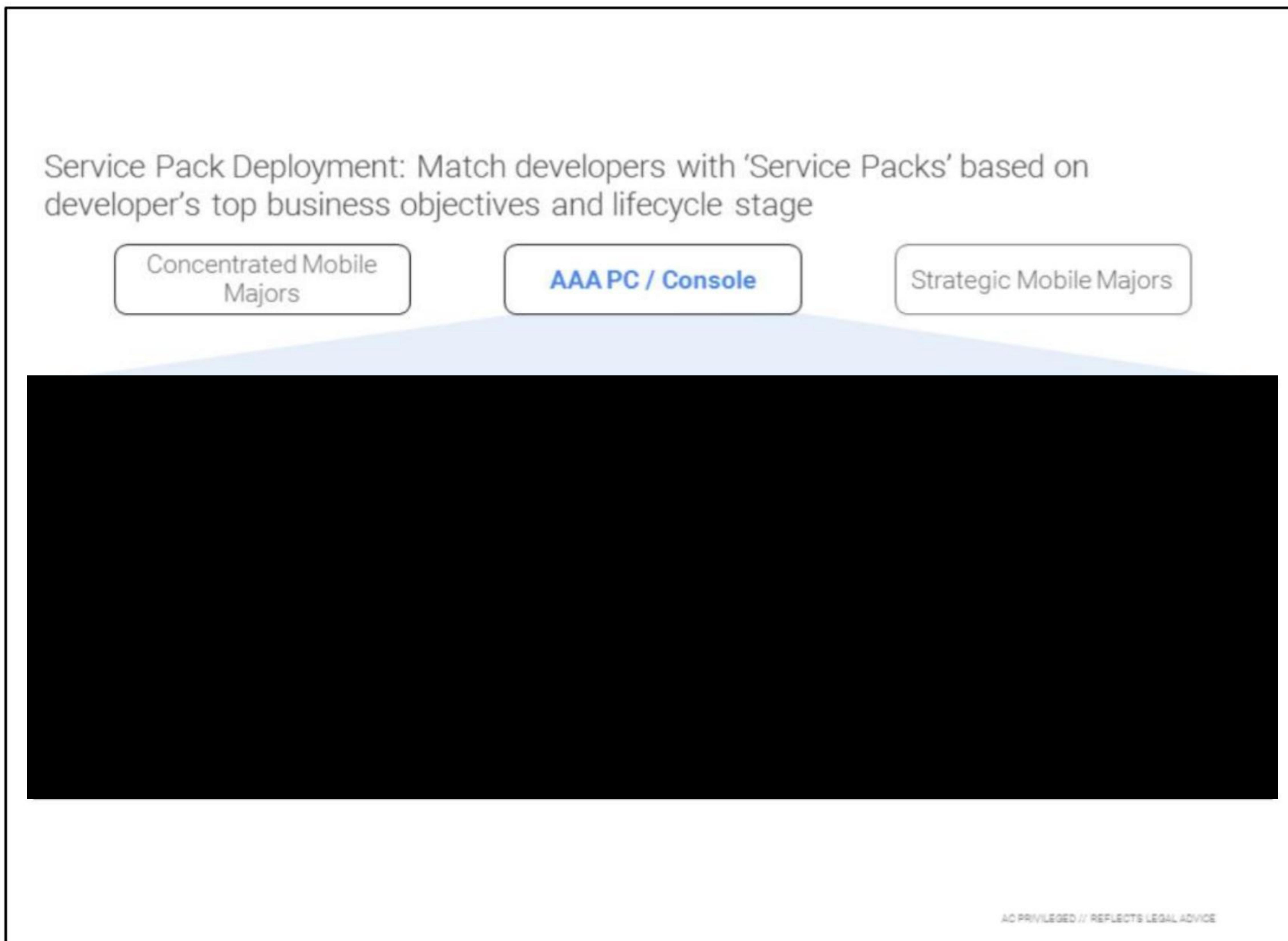
Expressed discontent over Play rev share and lack of unified support from Google

May forgo Play (& Android)

- Upcoming major new title launch
- Difficulty delivering hi-fidelity games on Android
- Capabilities to 'go-it-alone' on Android

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Dev List



More developers

-Piloting Build & Test & Launch packs with [REDACTED] → good early traction



3-year Value to Developer exceeds P&L cost*



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Note that

P&L cost starts exceeding Cost to deliver value in 2020 & 2021 as [REDACTED]

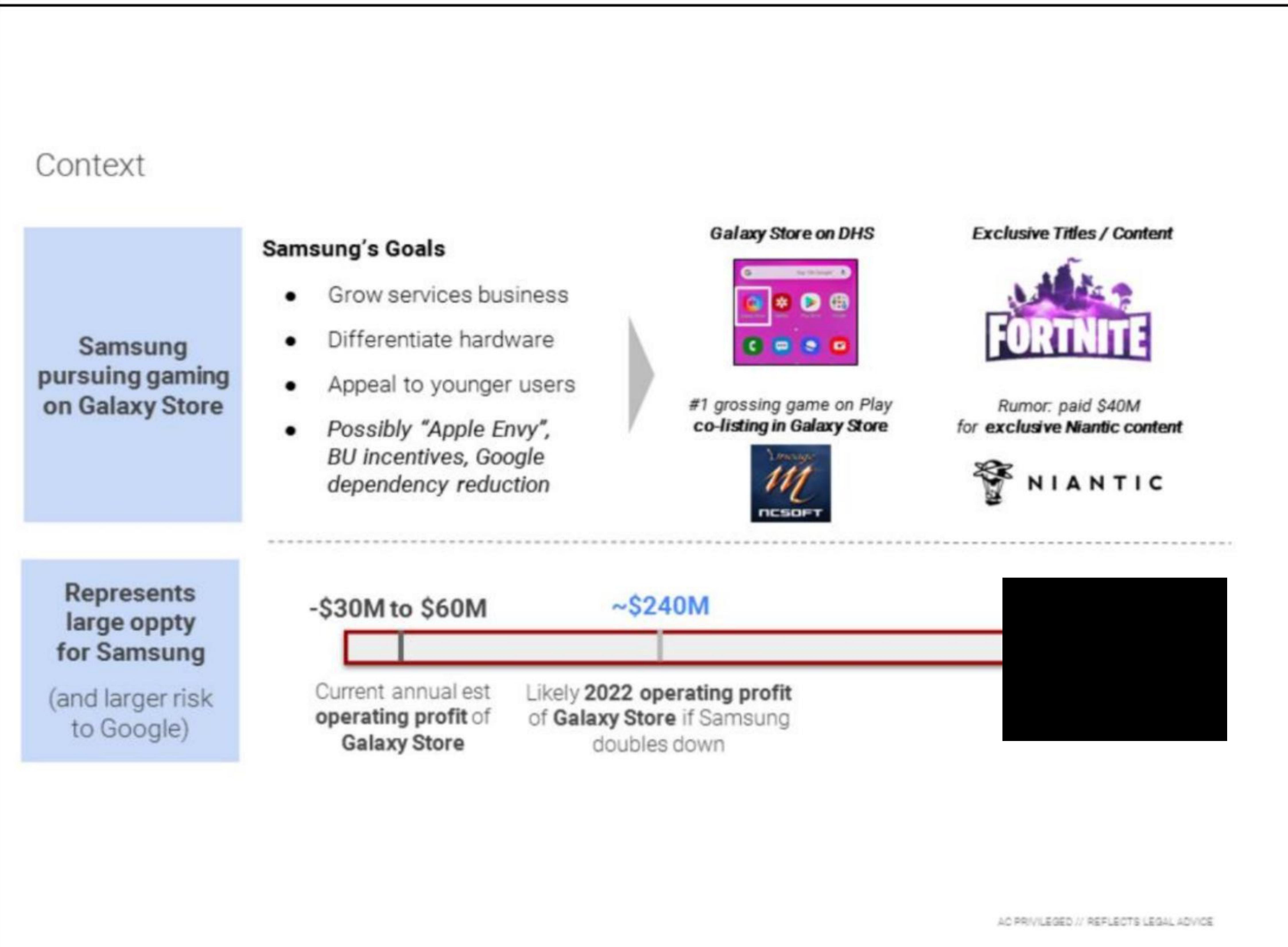
[REDACTED] increases

TWO PROPOSALS

Top Developers

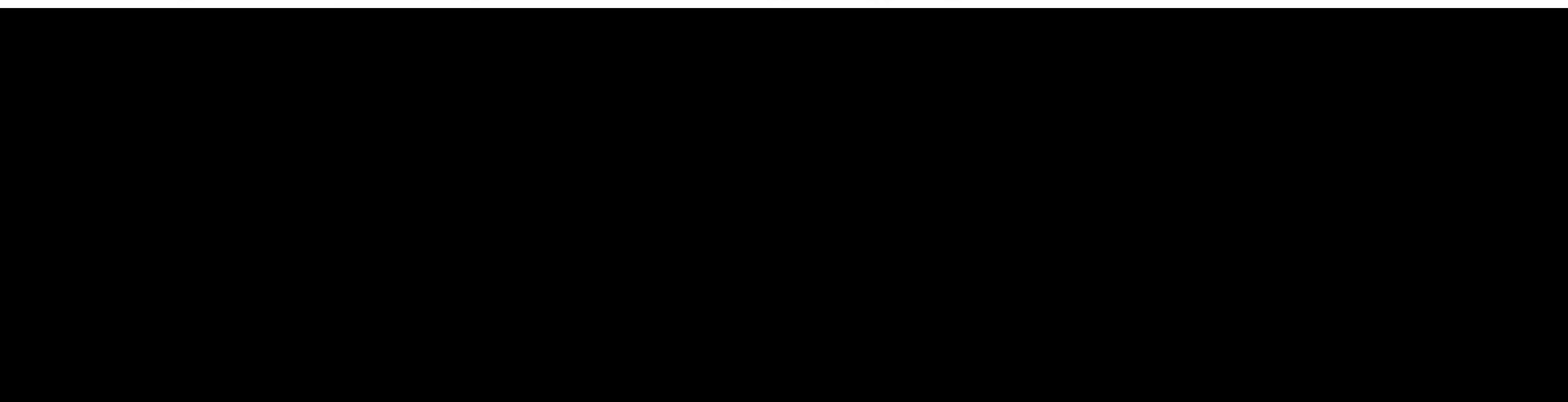
Samsung

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Jamie / Jim

Proposal: strategic collaboration that advances Samsung goals, promotes Play on Samsung devices, and improves Android gaming experience



**Financial
Gives**

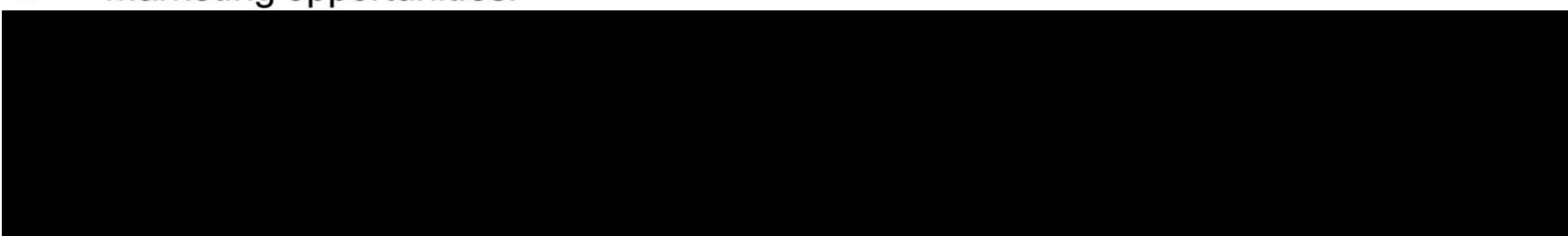
- Ads rev share from syndicated Google Ad products
- Co-marketing opportunities for Samsung-exclusive content and deals
- Up to **\$10M in 'Play Points' discounts** for 1 year for Samsung phone buyers
- Up to **\$60M annual payment for 4 years**

Google Gets

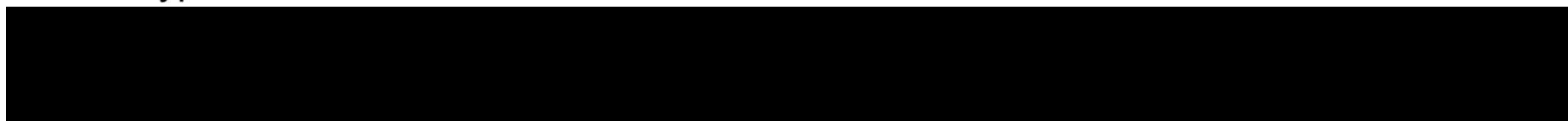
- Play hosts Galaxy Store games/apps, and provides billing, security, and updates
- Play and Galaxy Store are only app stores on Default Home Screen
- Samsung adheres to Android Gaming Standards

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- We want to collaborate with Samsung and bring multiple levers (not just cash) to the table. Some levers are win-win ([REDACTED])
- Upfront cash payment is needed to address their Galaxy store P&L. We are anchoring on the range of net profit that we estimate Galaxy store makes
- Potential upside from ads syndication would be lucrative for both Samsung and Google (size depends on how much Samsung is willing to partner wrt surfaces & ads targeting parameters). Samsung does not need to build its own large sales team and court devs. Can participate in the upside as several large publishers do today.
- Marketing opportunities:



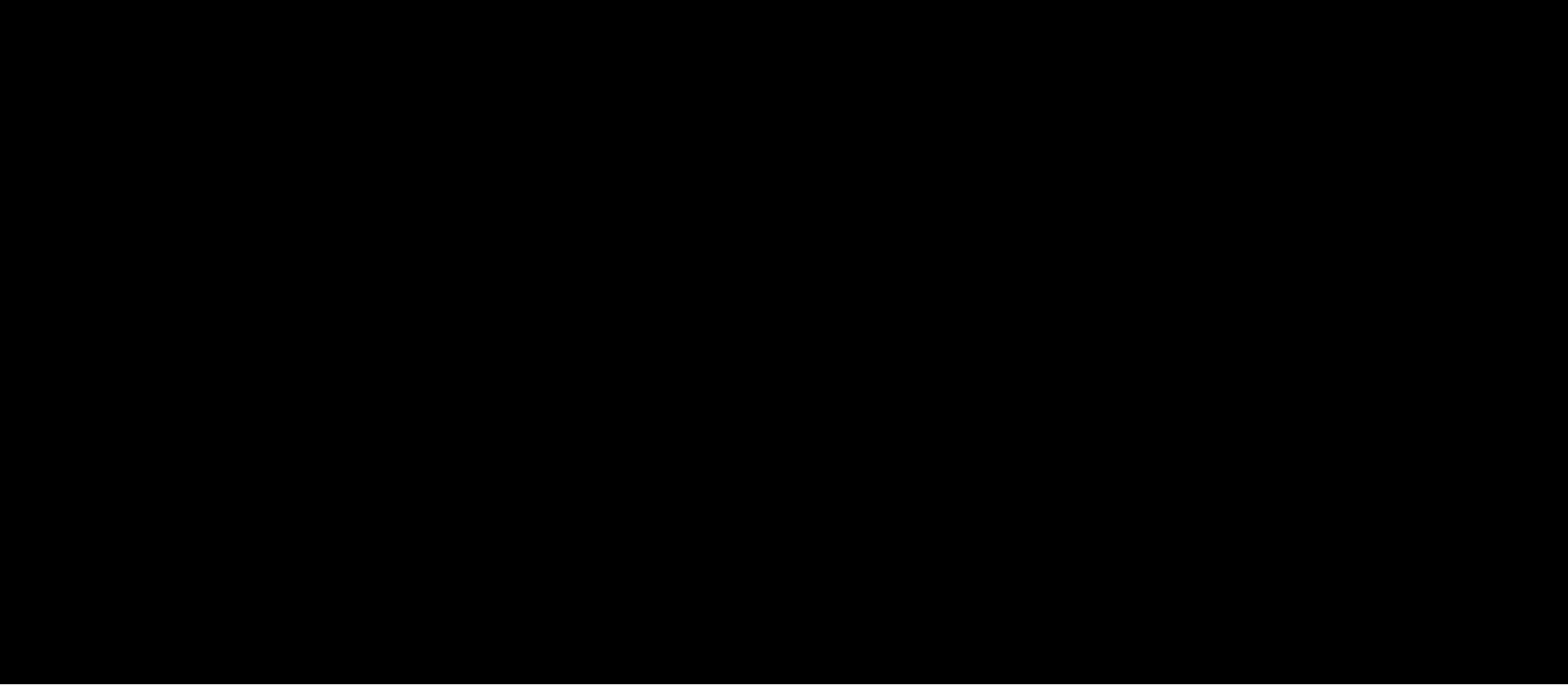
- Playpoints:



Financial Summary & Risks

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Ask to BC: Initial Approval of Top Dev Service Packs (including [REDACTED]),
and 4 year Samsung deal



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Risks and Mitigation

	Risks	Mitigation
Top Developer Support	Contagion to other developers Other developers ask for increased support	
	x-PA execution & operational complexity Google historically hasn't flexed 'One Google' muscle. Title launch dates are also volatile	
Samsung	Samsung reverts to 1P store backend after deal expires	
	Erode Play brand & user loyalty	

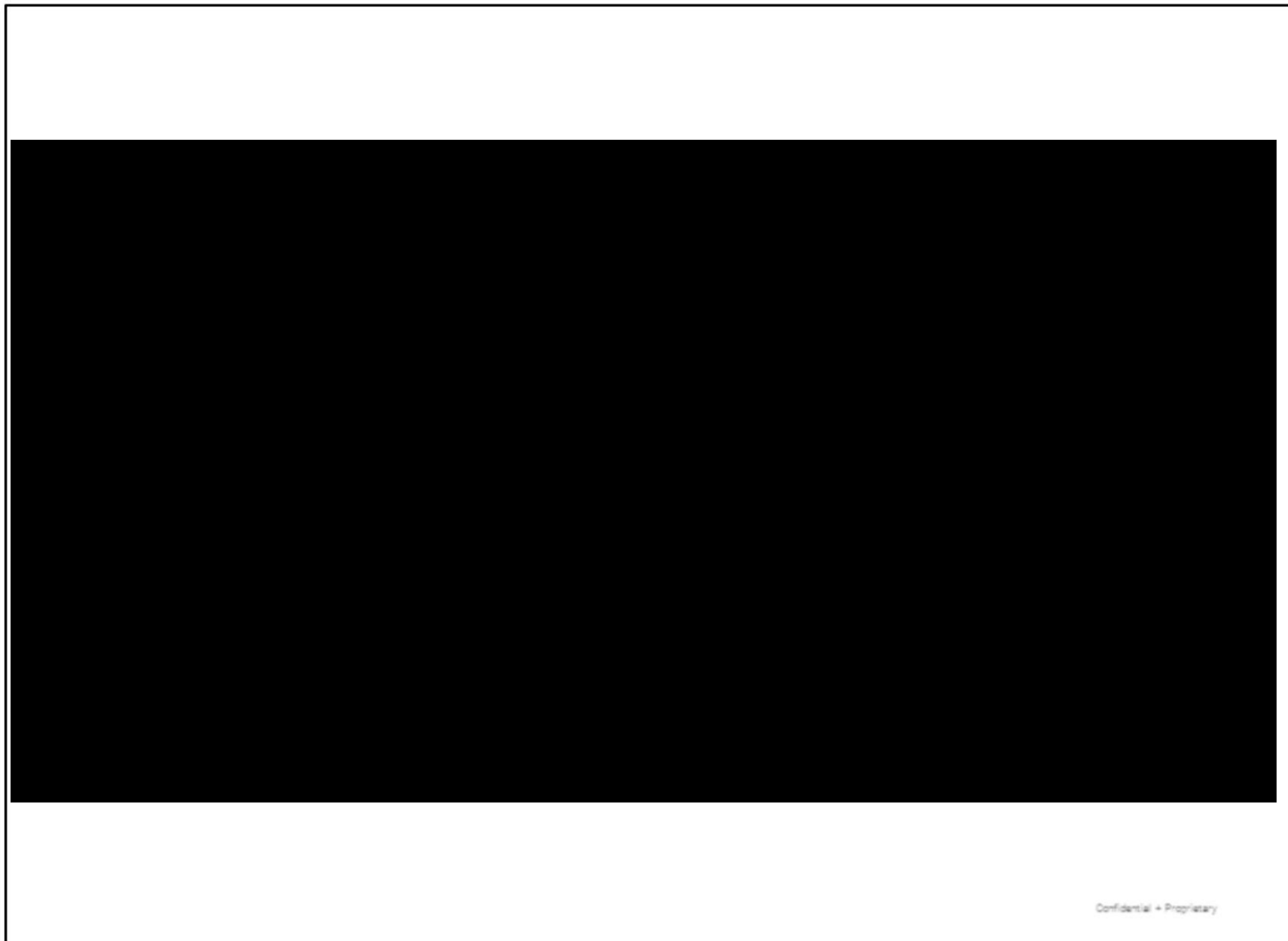
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Appendix

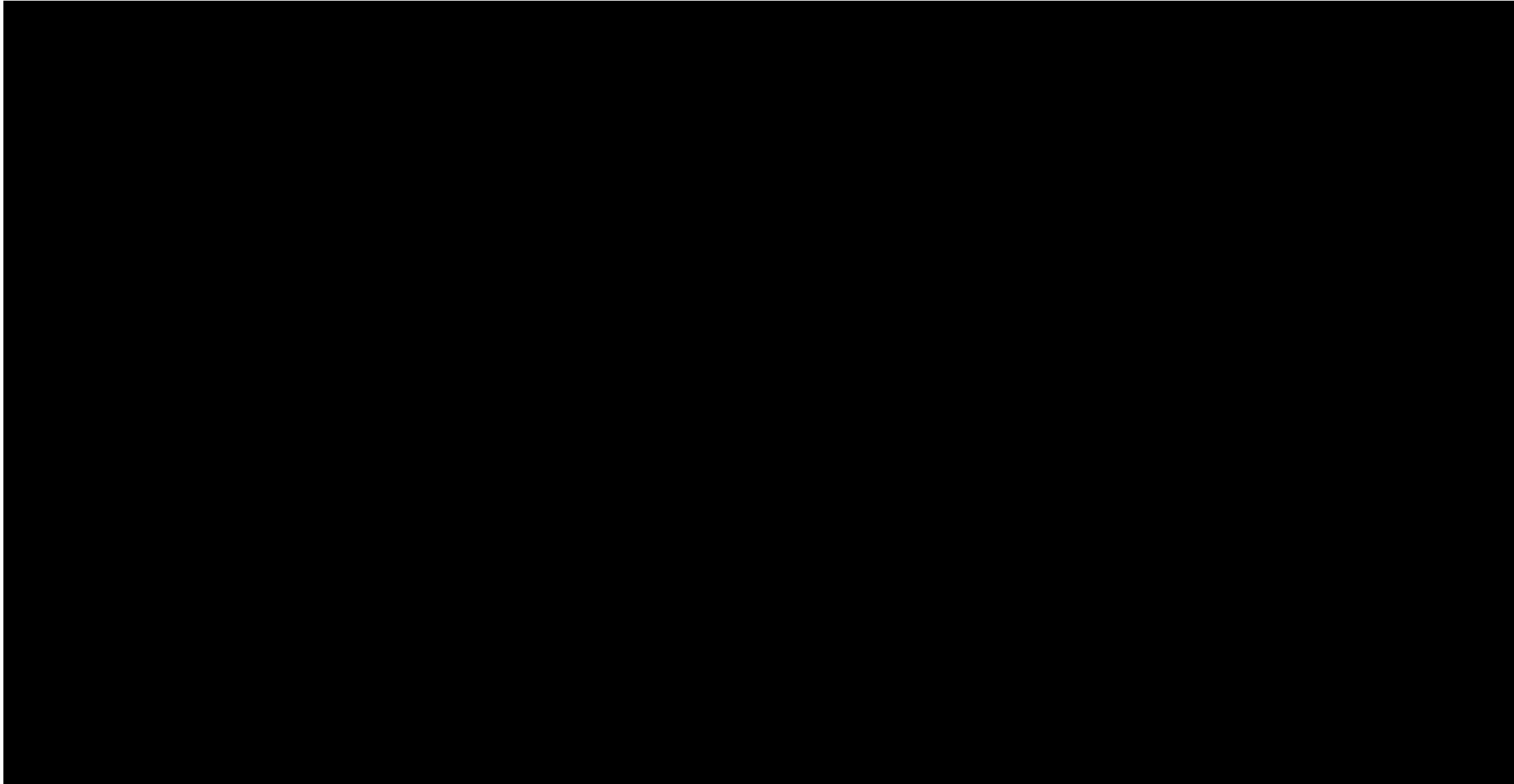
Financials

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Marketing line includes [REDACTED] and also accounts for incrementality from marketing spend

Developer Service Pack + Samsung deal would mitigate most of the risk



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Net Value: Mitigation - Investment

Risk builds over time



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Play Revenue = Apps & Games + Ads on Play

2019 Assumptions:

Epic Store to launch Q4 2019

Risk from Samsung and Amazon store already underway with existing stores and already known co-listing of top developers (██████████
██████)

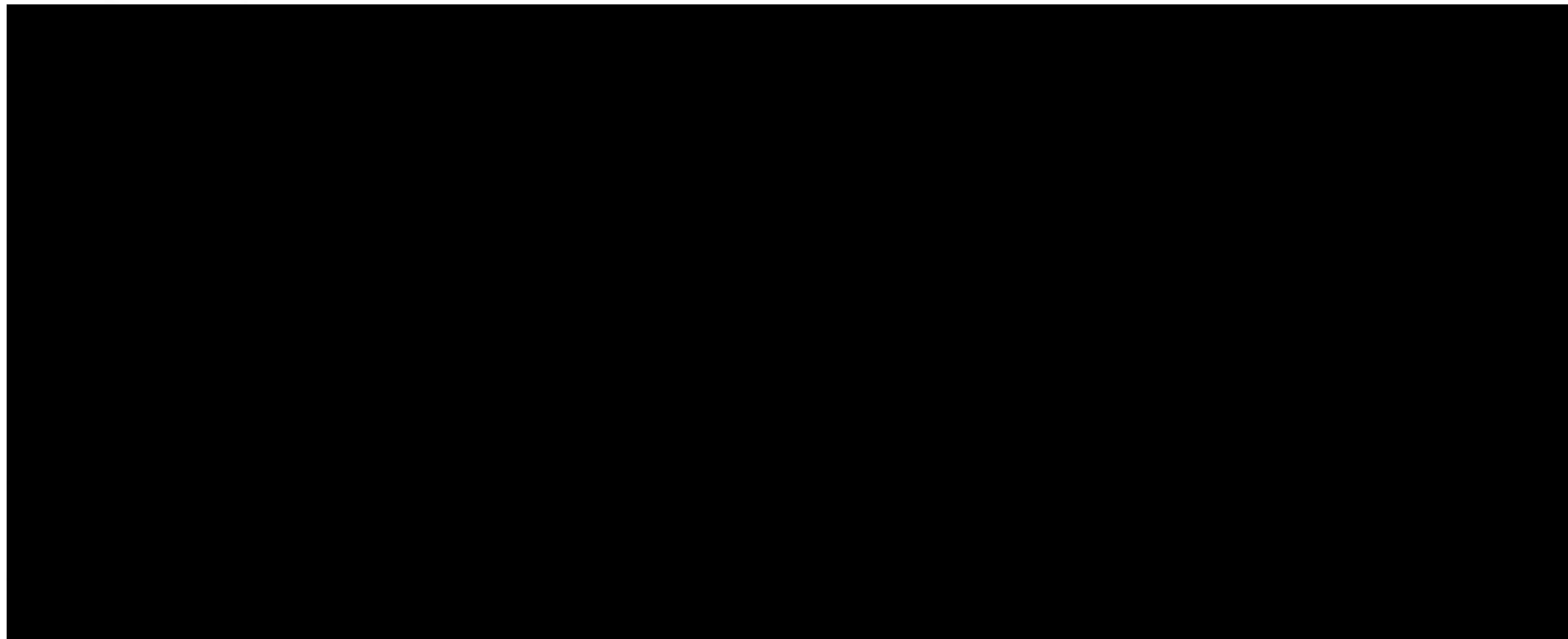
A couple of partial exclusives off-play expected to occur in 2019

Play would still retain at least ~50% of the top developers in 2019 with most likely defection of top developers ramping up to 100% in 2020

<https://docs.google.com/spreadsheets/d/1e7ZzdGpYZJIEhOIESEvrYINZ-M-6wptQwT8Alxyf4Ns/edit?ts=5c807718#gid=1323652187>

Hypothetical Hug and Samsung, Hug wound down after year 2

Margin Impact (2019 - 2022)



Samsung deal investment does not include any additional TVC/OpEx/HC costs for product offerings

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Source sheet:

<https://docs.google.com/spreadsheets/d/1e7ZzdGpYZJIEhOIESEvrYINZ-M-6wptQwT8Alxyf4Ns/edit?zx=5yg339kwdcpm#gid=1323652187>

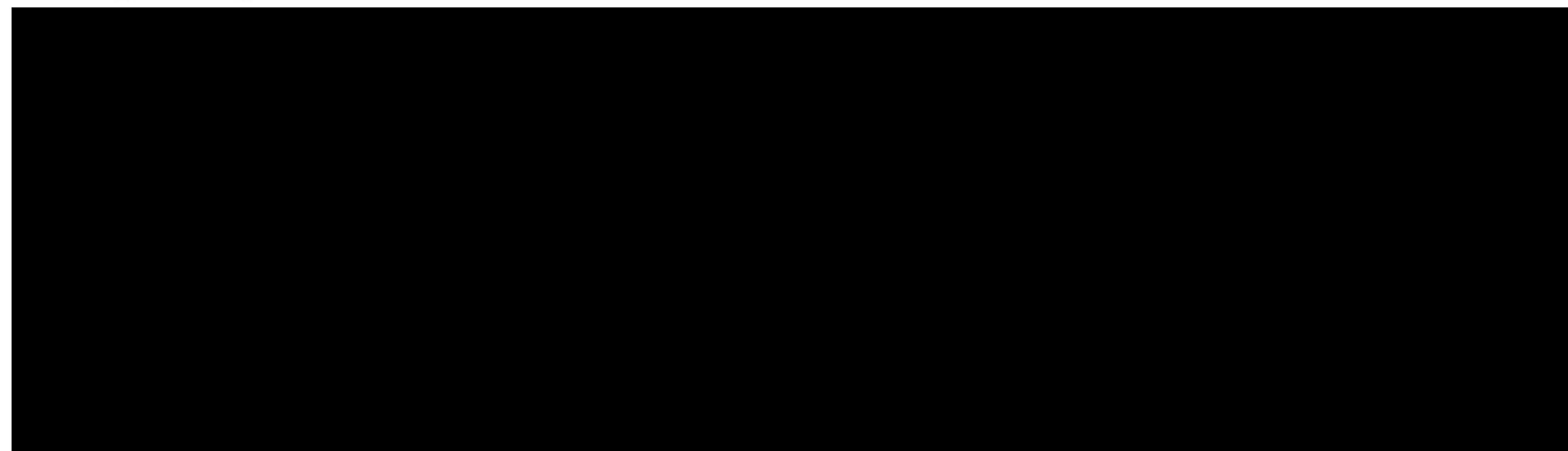


Source sheet:

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Hug only (no Samsung deal)

Margin Impact (2019 - 2022)

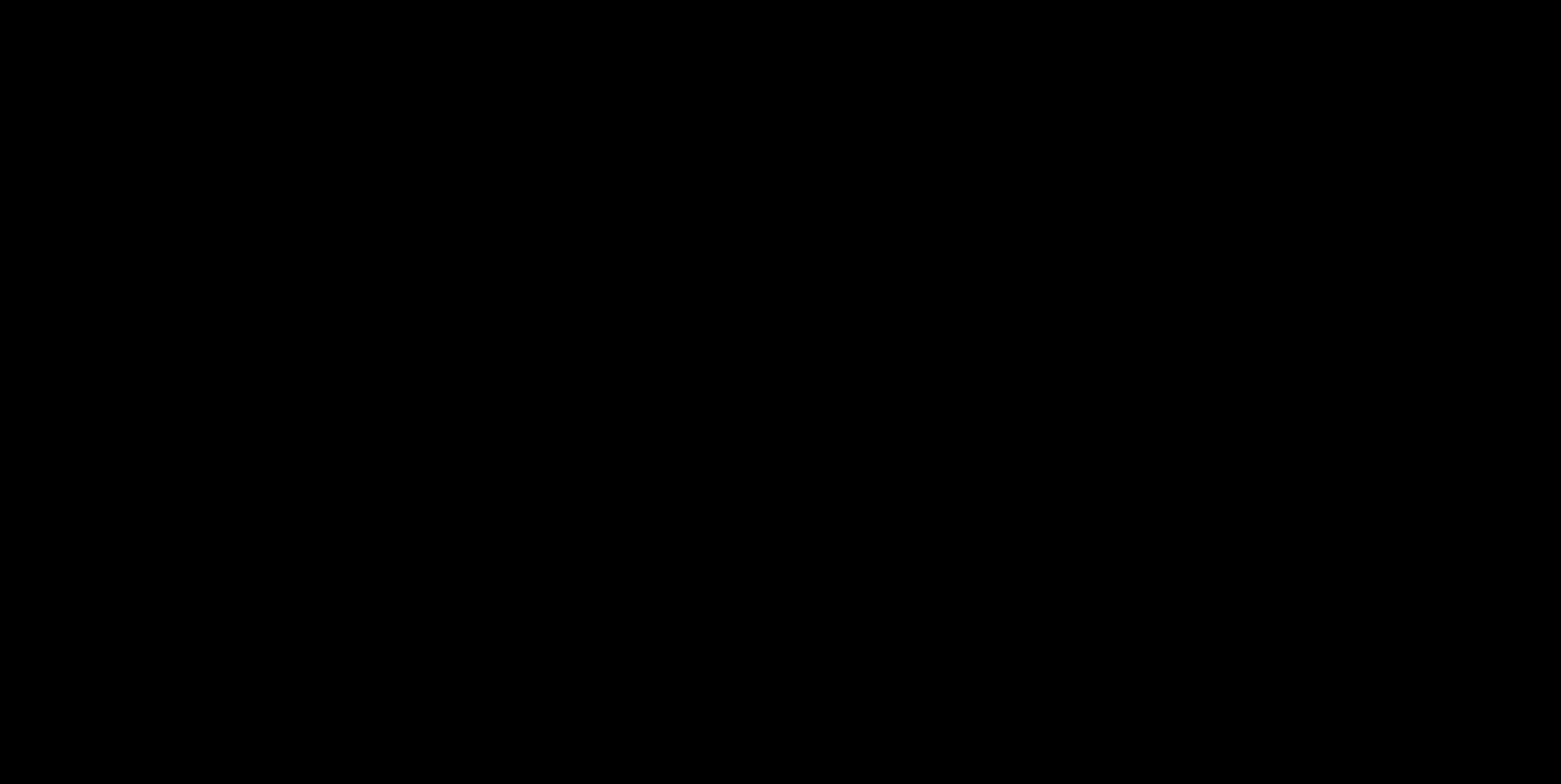


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Source sheet:

<https://docs.google.com/spreadsheets/d/1e7ZzdGpYZJIEhOIESEvrYINZ-M-6wptQwT8Alxyf4Ns/edit?zx=5yg339kwdcpm#gid=1323652187>

P&L economics of program to mitigate against [REDACTED] of margin over 2019-2022



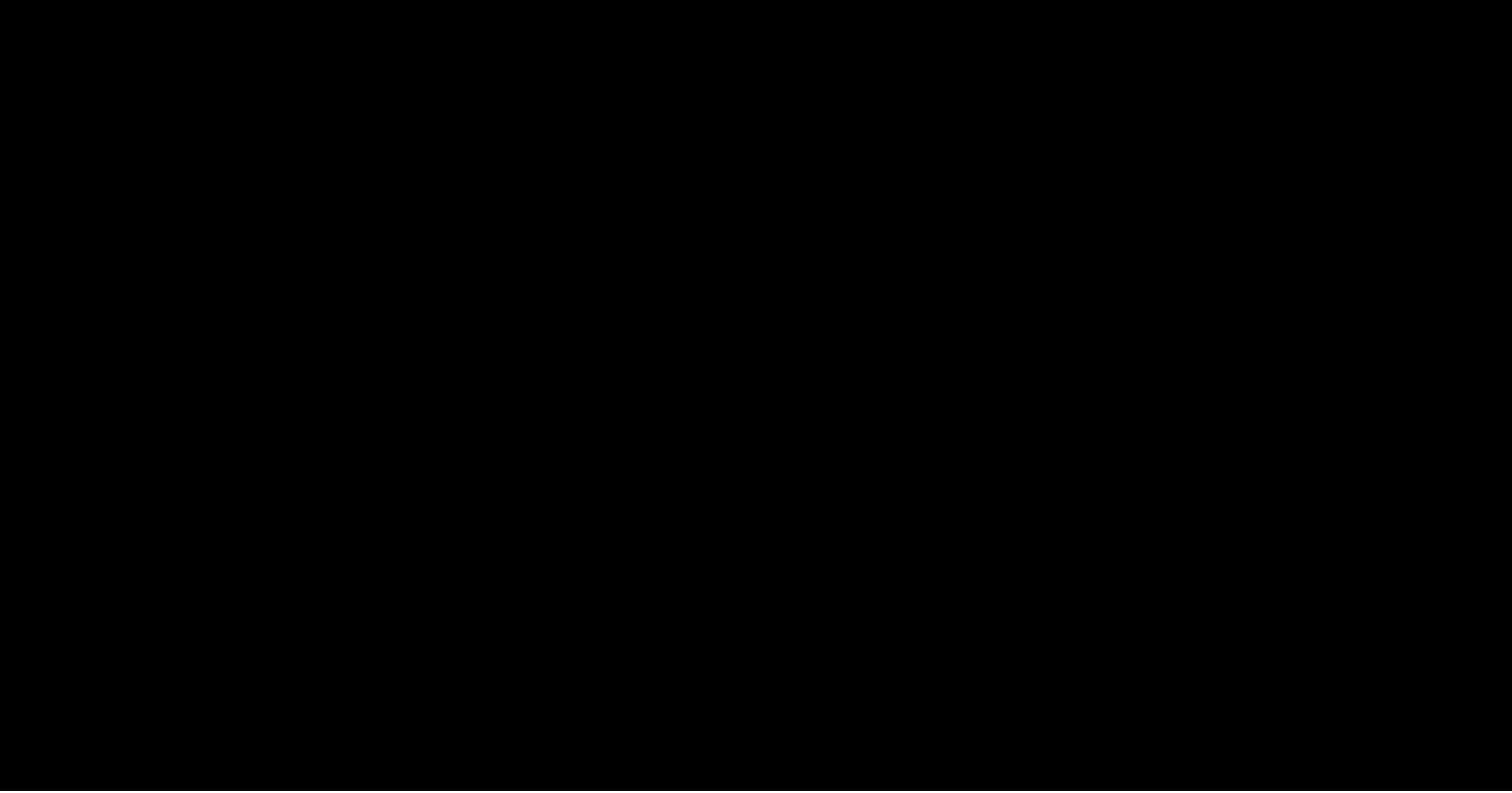
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Marketing line includes [REDACTED] and also accounts for incrementality from marketing spend

Top Developer Support

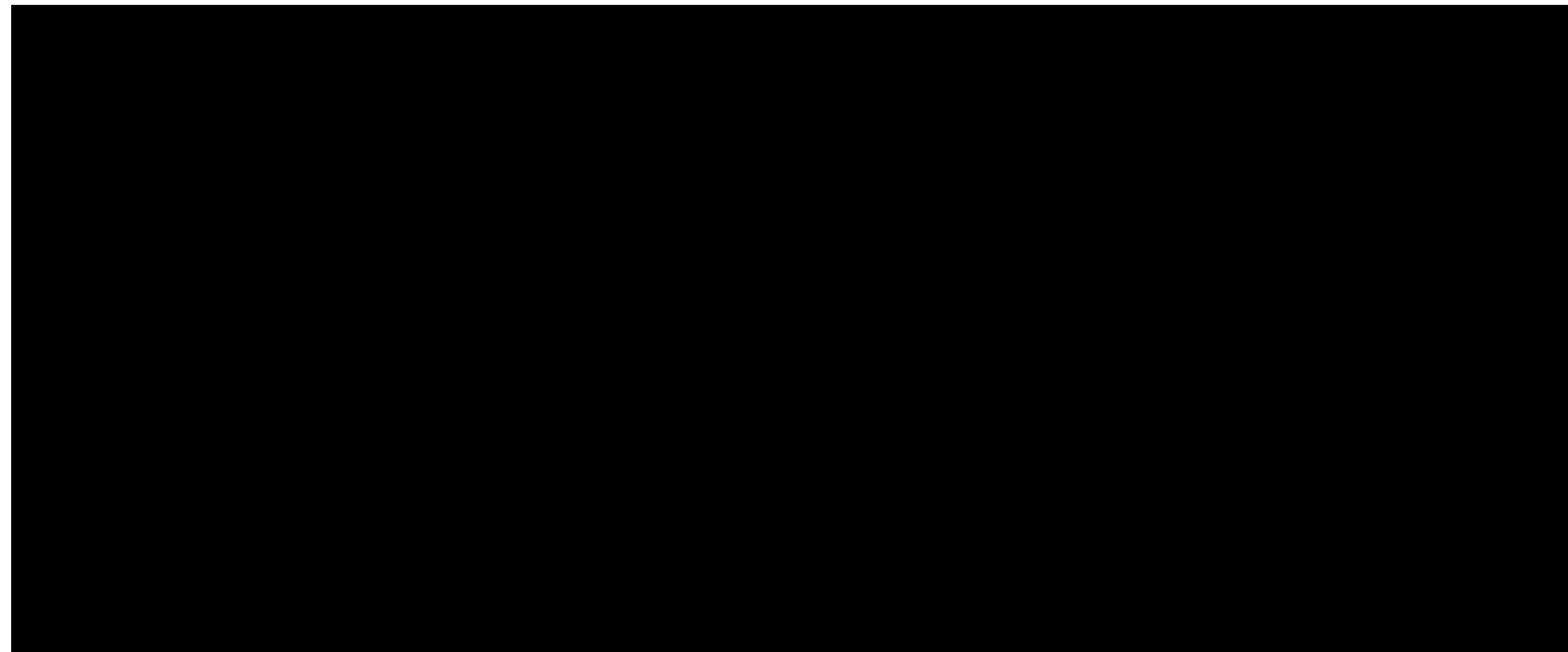
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Developer Value View



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Developer List



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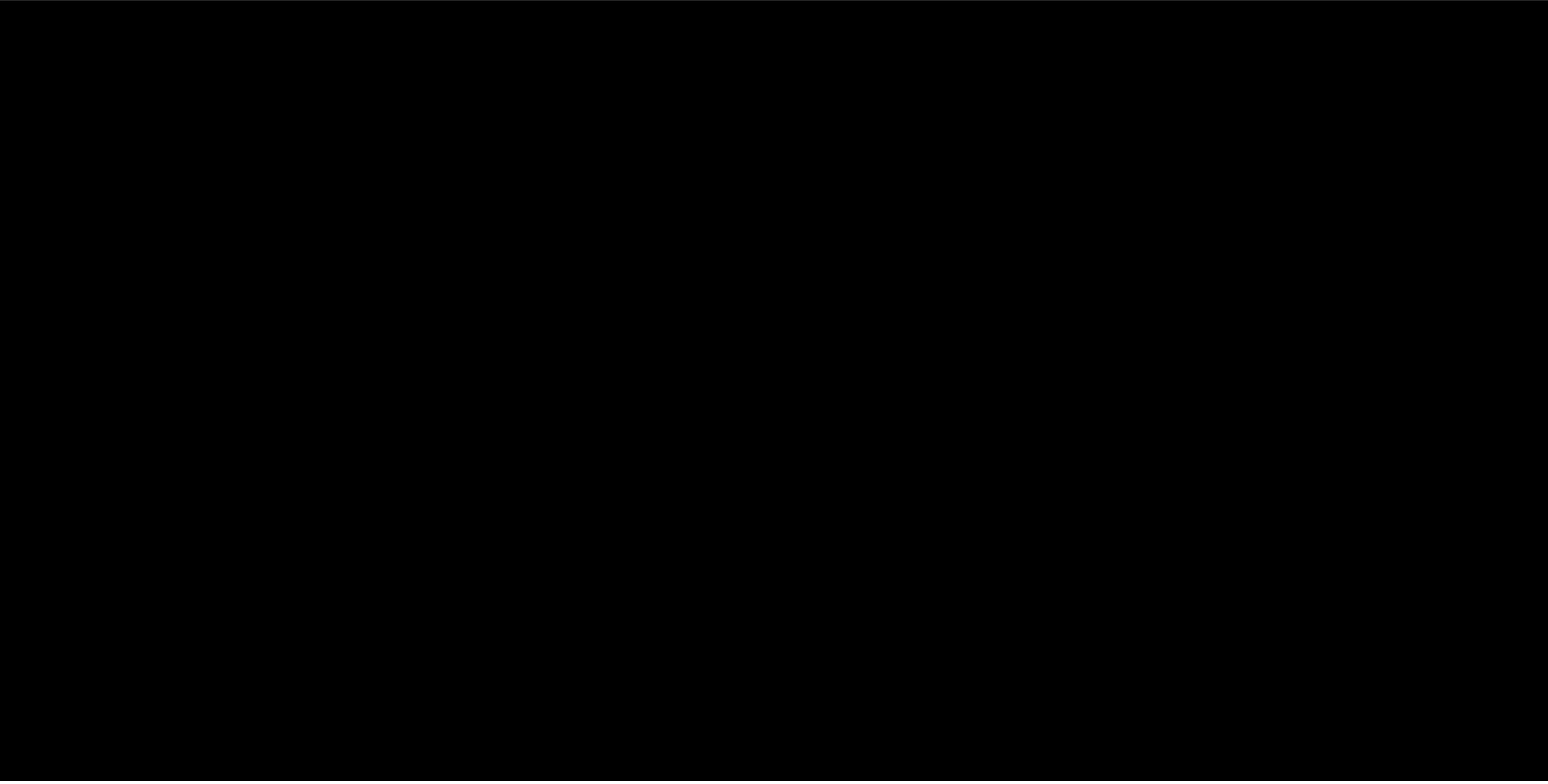
Developer Eligibility Criteria and Obligations

Developer
Eligibility

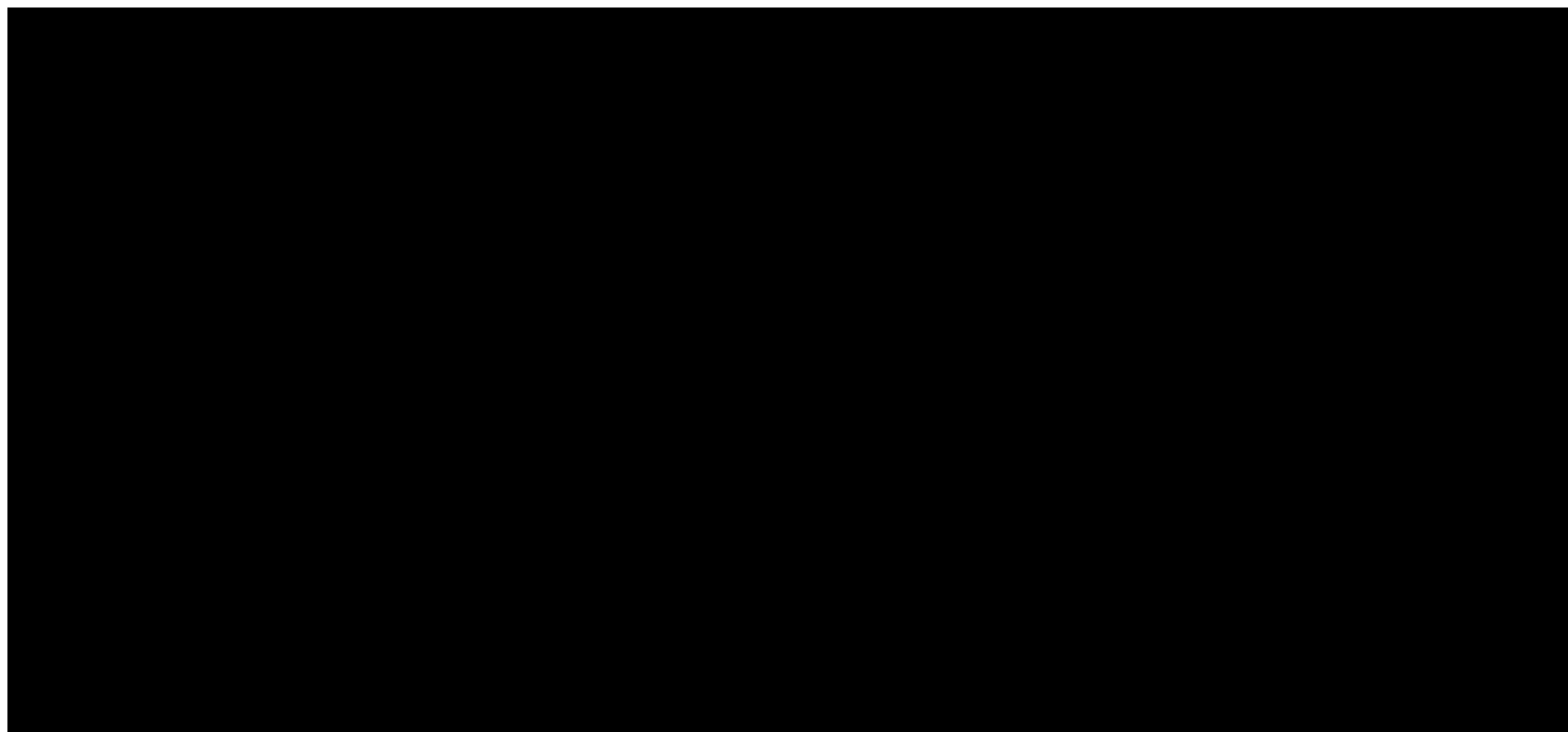
Developer
Obligations

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Ads SVAs for Hug Devs: [REDACTED] and [REDACTED] FTE



[REDACTED] for Hug devs: [REDACTED]



What about Unknown Sources?

- **Developers have choice on Android (key distinction from Apple). Changes to 'Unknown Sources' create legal / regulatory challenges**
- **We want developers to actively choose Google, and we want happy customers**
- **Risk still remains even with changes to Unknown Sources**
 - Worse developer sentiment; "app store tax" meme acceleration
 - Alternative stores can still be preloaded
 - Sideload remains

Epic / Fortnite

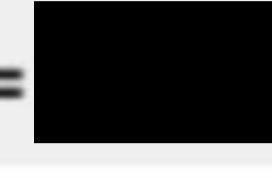
Fortnite is active on ~6M Android devices

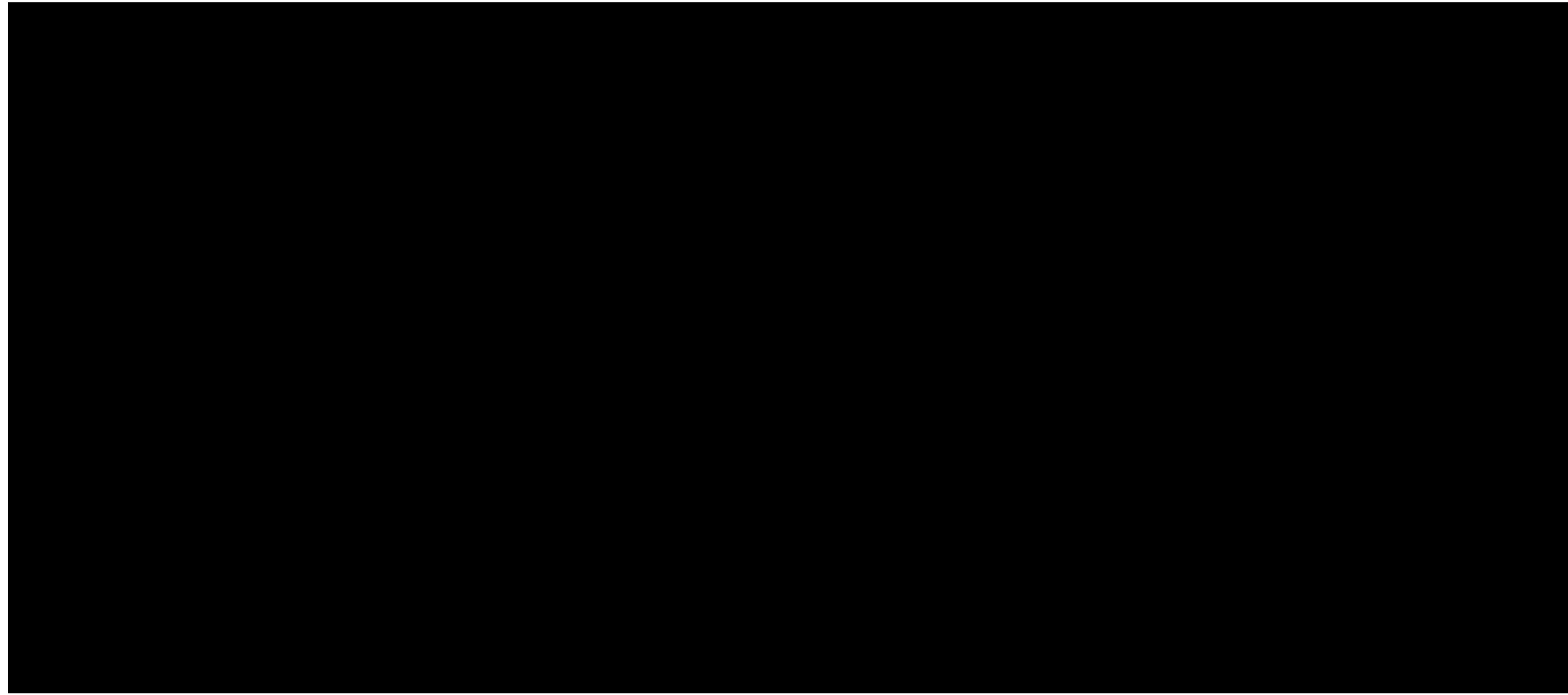
We estimate Fortnite would have been substantially more successful had they launched on Play

However, other developers might follow Epic's path for various reasons:

- Every developer that follows Epic's path & launches on the Epic store will have less friction & a larger addressable user base than title before it.
- Developers can afford to take a ~20% performance hit on Epic store (due to 88% rev share) and still break-even. Or a ~30% hit in performance if they decide to go-it-alone.
- Developers place value on owning the entire customer relationship beyond what we assessed in our short-term analysis of Fortnite performance.
- PC / Console developers that have long term relationships with their customers already have a good knowledge of which users drive spend. They can directly convert those players over to the mobile version.
- Tencent ownership of influential developers might bias their choices.

Play Concentration

2019 Projected Play Spend = 



Samsung

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To achieve our “gets” and help Samsung’s goals, we recommend a set of Product and Financial “gives” based on guiding principles

Product

Financial

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<p>PRODUCT OFFERS – Play as backend to Galaxy Store frontend Play backend to Galaxy Store frontend - how it would work</p>	
<p>Overview</p> <ul style="list-style-type: none">• Surface area: All Samsung-owned surface areas that facilitate download of Android mobile apps, including Galaxy Store and Game Launcher• Catalog: Apps with unique functionality or offers for Samsung users• Store layout: Samsung continues to curate content and do top-level promotion	
<p>Risks and Mitigations</p> <p>Lost Play Ads revenue due to shift of Play users to Galaxy Store <i>Mitigation:</i> [REDACTED]</p> <p>Play brand dilution <i>Mitigation:</i> [REDACTED]</p> <p>Samsung reverts to 1P backend and promotes Galaxy Store after deal expires <i>Mitigation:</i><ul style="list-style-type: none">• [REDACTED]• [REDACTED]</p>	

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FINANCIAL OFFERS – Lumpsum Payment

Likely 2019 net profit of Galaxy Store: -\$30M to \$60M profits*Based on extrapolating public estimates of Samsung's Korean app business*

Assumptions

Samsung revenue share is 20-30%

- \$24-35M Samsung net revenue in KR

250 HC OPEX to run the store

- Roughly 15% size of Play team

Ads revenue: ~\$10M

- Based on impressions and CTR data shared by Samsung at GDC

Source: Korean [industry articles](#); Samsung Galaxy Apps [partner program](#), Play Finance [Galaxy Store profit model](#)

Global estimate, \$M	Low	High
Galaxy Store Consumer Spend	\$360	\$545
Galaxy store revenue (20-30% of spend)	\$70	\$165
Payment processing cost (~3% of spend)	-\$10	-\$15
Operating cost (~250 HC)	-\$100	-\$100
Net profit (IAPs only)	-\$40	\$50
Ads revenue	\$10	\$10
Total net profit (incl Ads)	-\$30	\$60

[Link to overall proposal](#)

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FINANCIAL OFFERS – Play Points

Integrate Samsung with [REDACTED] to help drive Samsung device sales and user engagement

Proposal	Details	Considerations
[REDACTED]	[REDACTED]	[REDACTED]

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Exhibit A4

Public Redacted Version

EXHIBIT 5

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Google

PEX & BC review:

Google Distribution on Android Framework

As presented at BC

June 2019

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Executive Summary - We are fine-tuning Android Search Rev share (ex Samsung) to protect Google from key strategic risks

Update: RSA spend and enrollment behind the target we set with 2016 BC approval

- 2016 BC approval targeted 85% Android base coverage at ~15% of Total Search Distribution Revenue via Android. Due to device by-device nature of the deal, we are (1) not getting protection on some devices and (2) getting very limited traction in the "bonus" tier that is supposed to align OEMs with Google's xPA priorities

Since 2016, Android dynamics changed and we have higher exposure of Search and Play revenue than before

- Chinese OEMs and Samsung are actively investing in creating own app and services ecosystems; Microsoft and Amazon pursuing distribution deals on devices not covered by RSA; and Android market share is under pressure in developed carrier led geos

Ask: Spend [REDACTED] in 2023 across Search and Play for carriers and non-Samsung OEMs to secure platform protections for Search, and Play and critical apps protections on more devices

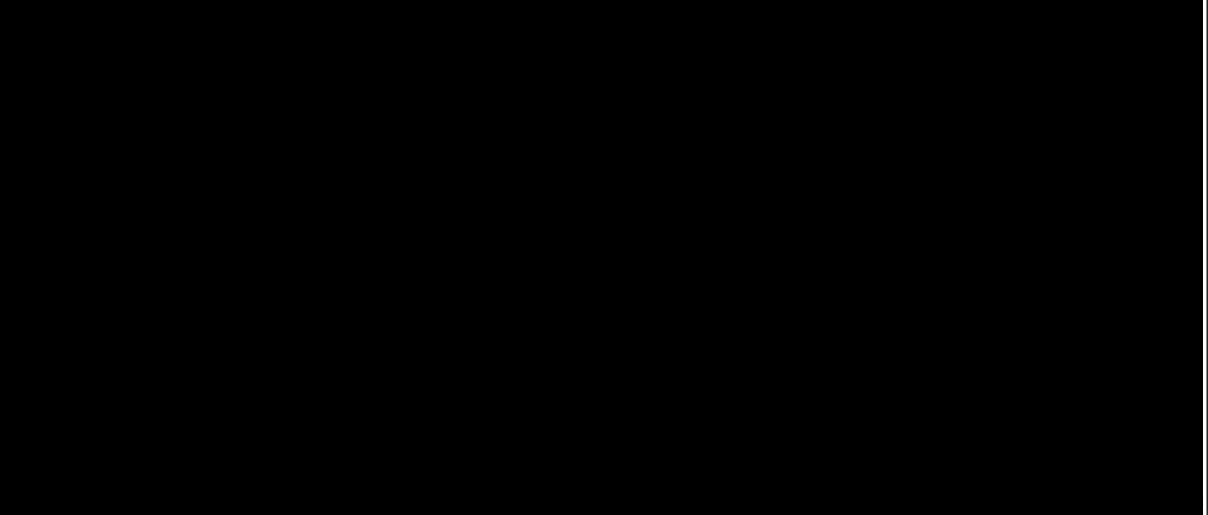
- Introduce a new platform tier of RSA to secure browser defaults and assistant DHS exclusivity & gesture at scale
- Offer up to [REDACTED] Play rev share to OEMs [REDACTED] to key CN OEMs, [REDACTED] to smaller OEMs, spending est. [REDACTED] in 2020 and up to [REDACTED] in 2023 (steady state) in addition to the bonus tier of current RSA to secure Play exclusivity, Android upgrades, and distribution for critical apps (Comms suite, Pay, Photos, Gmail, Gcal, Discover suite)
- Offer additional 4ppt of Search & Assistant revenue share to most strategic partners (for total of [REDACTED] [REDACTED] and [REDACTED] for carriers) to incentivize clean UI devices with full set of Google apps

Note: Total Search Distribution Revenue via Android Forecast includes Non-RSA Partner Dist, Rev

2

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Scope: Proposed changes will impact ~70% of Android activations and Search Distribution Revenue via Android



Formatting

Rewind back to 2016 BC Approval: Goal to secure more access points / Assistant / security updates / apps across more devices

Key "Gets"	Detail of the "Gets"	Key Terms / Outcome
Set additional access points	Secure 3 rd party browser defaults (not covered by MADA) on more devices (in 2016 ~45% devices were covered)	
Ensure security updates	Accelerating security updates is an Android ecosystem imperative	
Account for Assistant considerations	-Assistants increasingly seen as a future platform -Amazon heavily investing in Alexa & globally pursuing distribution partnerships w/ Android OEMs & Carriers (US/CA, UK, ID, LATAM, IN)	What worked: ~68% activations/ 57% actives have protections for: <ul style="list-style-type: none">Search Exclusivity (DHS in EU)Search defaults on 3P browsersAssistant DHS exclusivityFeed (~15% of activations)Security updates
Cover strategic regions	Expand & grow coverage in key regions (JP, KR, IN, ID, LATAM)	
Get distribution for additional apps	Secure defaults for 6 apps, critical for user experience (Mail, Photos, Calendar, Gboard, Messages, Duo) for additional 4ppt of revenue	What did not work: ~7% activations covered by additional app protections

In 2016, BC approved TAC to increase up to ~16-17% of Total Android Distribution Revenue in 2016-2023 assuming 100% Android devices would be covered by RSA (50% would be in the bonus tier):

(\$ in billions)	2017A (Total Samsung X-Samsung)	2018A (Total Samsung X-Samsung)
BC Approved TAC		
% of Forecasted Distribution Revenue		
TAC Actuals		
% of Actual Distribution Revenue		

*Carrier and Samsung negotiations took longer than expected, so the anticipated shift in TAC to Carriers did not materialize

4

Since 2016, ecosystem dynamics have changed and competition has increased. Gaps in coverage exist.

- 1 Search and Assistant
- 2 Play / Android
- 3 Other apps
- 4 Android reach [Carriers]



- EC ruling created opportunity for **rivals to secure full Search exclusivity** on devices in EEA
- Microsoft and Amazon actively pursuing deals for Bing/Alexa on devices not covered by RSAI (e.g. Bing is a default search on Xiaomi & Vivo in India; Alexa is prominent on LG/ Moto Prime phones)



- Chinese OEMs have **alternative stores preloaded on ~80% of Android devices**, and have a meaningful overlap with Play offering: **Huawei working on their own OS**
- Samsung ramped up investments into their own store with S10 launch
- If Play is less relevant for OEMs, MADA protections may be at risk (leading to higher TAC)



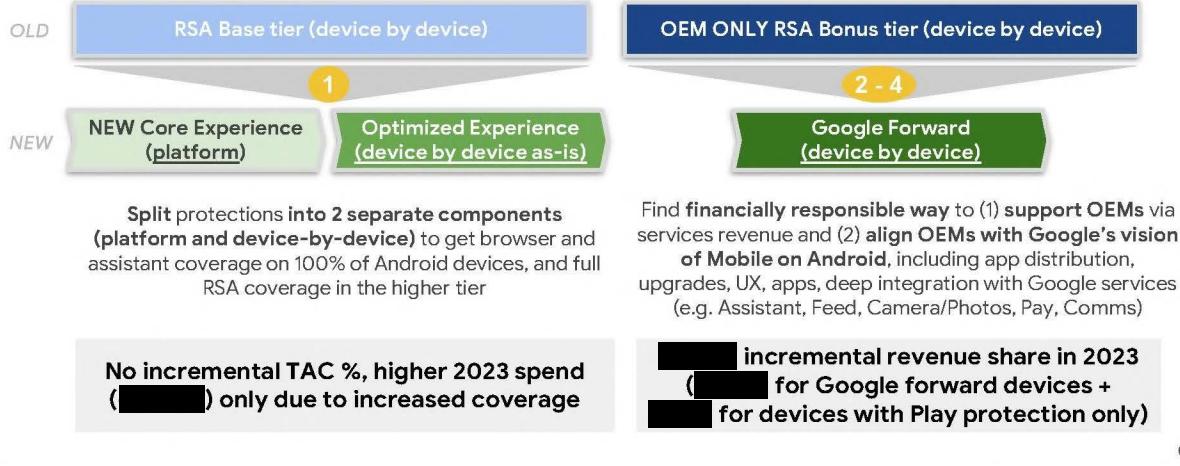
- Chinese OEMs have ~90% services overlap with GMS apps and are at an inflection point on **expanding their services outside China & India**, e.g. Xiaomi made \$125M in service revenue in India in 2018
- iOS users expect **cohesive set of services** incl. Messages, Photos, Music, Mail, etc. and view lack of unified offering on Android as a deterrent for **switching**



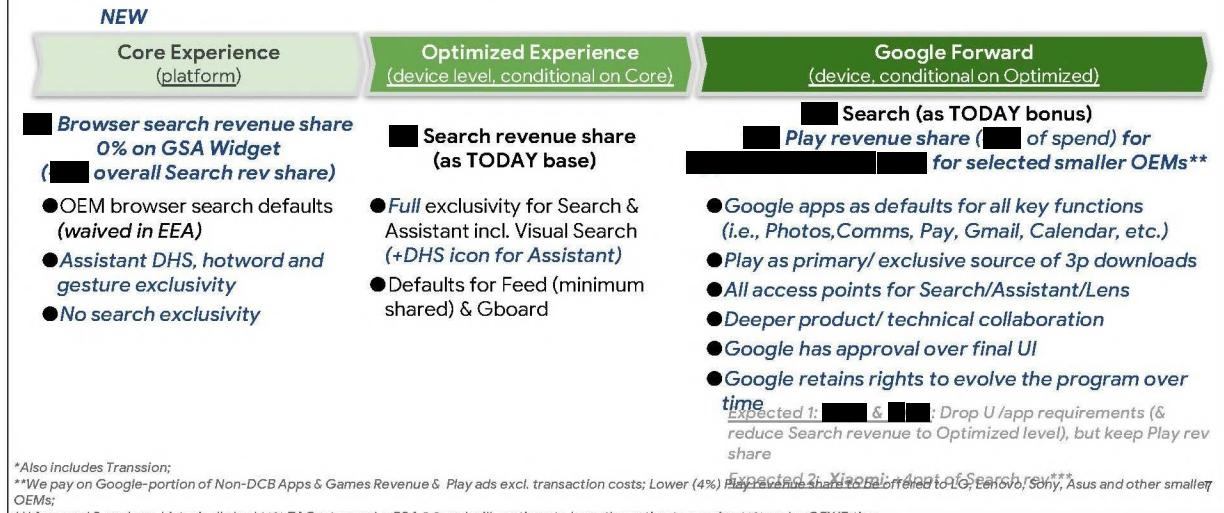
- Android **share is under pressure in US** (lost 6ppt in 2018; 2% DAU decline), and **developed markets where most of the last year Android gains were driven by** [REDACTED]

NOTES: 1) Based on MagicEye [study](#) of Android One devices, controlling for user, device, and geo

New proposed structure (GDAF): Offer partners choice of 3 tiers of Google experience



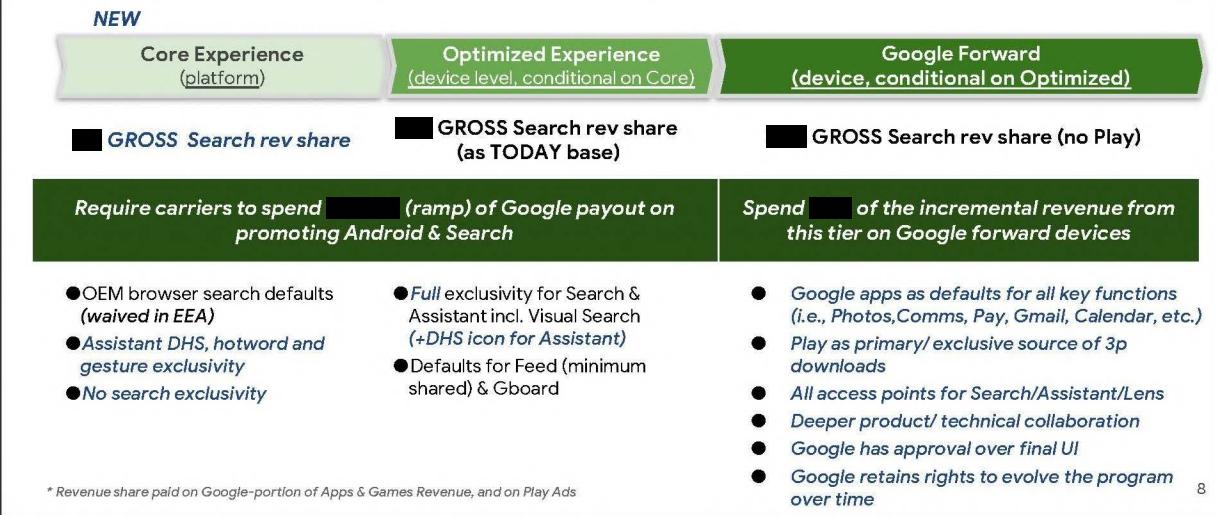
OEMs: We are proposing a 3-tiered deal framework that can be customized for individual partner via the fallbacks:



OS Upgrades and Play Exclusivity

Google approves the UX/SW experience, subject to change by Google, which today includes: deep integrations for Assistant, Clean UI, Defaults/ exclusivity for Comms, Pay, Photos, News/Podcast, Gmail, GCal)

Carriers: Similar 3-tiered deal framework that can be customized for individual partner via the fallbacks:



Search & Play revenues are top priority for Google forward tier
All gets incremental to Optimized tier; Google can update asks during the deal

	[P0] Optimized for Search & Play monetization 	Best Assistant experience on Android 	Cohesive phone experience 
Core gets	<ul style="list-style-type: none"> Core Search & Play provisions (e.g. Hotword, Discover, Play DHS exclusivity) 	<ul style="list-style-type: none"> SW integrations (e.g. gestures, lockscreen, visual cues, core app defaults (Gmail, Calendar)) 	<ul style="list-style-type: none"> UI & app preloads approval Defaults for preloaded GMS apps + no app duplication Google reserves right to evolve the list
Potential negotiation	<ul style="list-style-type: none"> Play full exclusivity Play FOP during setup Letter upgrades on low end devices 	<ul style="list-style-type: none"> BOM impacting integrations (e.g. dedicated button) 	<ul style="list-style-type: none"> Non-trivial eng work (e.g. AR/VR) Missing critical features (e.g. Photos in some goes) Carrier blocking (Comms in US)

9

Guiding principles

P0: Core Search and Play provisions are non-negotiable. We reserve the right with OEMs to also request implementation of additional revenue generating features (e.g. Play FOP setup in OOB)

P1: Assistant integrations are top priority. Only negotiable items are provisions where OEM BOM is impacted (e.g. HW buttons, DSP integrations, etc.). Waiving such provisions will result in a lower pay-out for the partner

P1: Cohesive phone experience (i.e. UI and app preload approval): Non-negotiable (including no duplication of GMS apps). Google reserves the right to change/evolve the list of requested apps based on feature availability (e.g. Comms in JP), or changed priorities (e.g. require Camera integration, GPay additional features, etc. in the future)

How are we spending the [REDACTED] in 2023: Protecting Search, Assistant, Play and getting 483M clean, Google forward devices

1&2

Revenue at Risk Hedging: [REDACTED]
([REDACTED] search + [REDACTED] Play)

1

Search & assistant
[REDACTED]

2

Play on
Oppo/Vivo/
Transsion
[REDACTED]

3&4

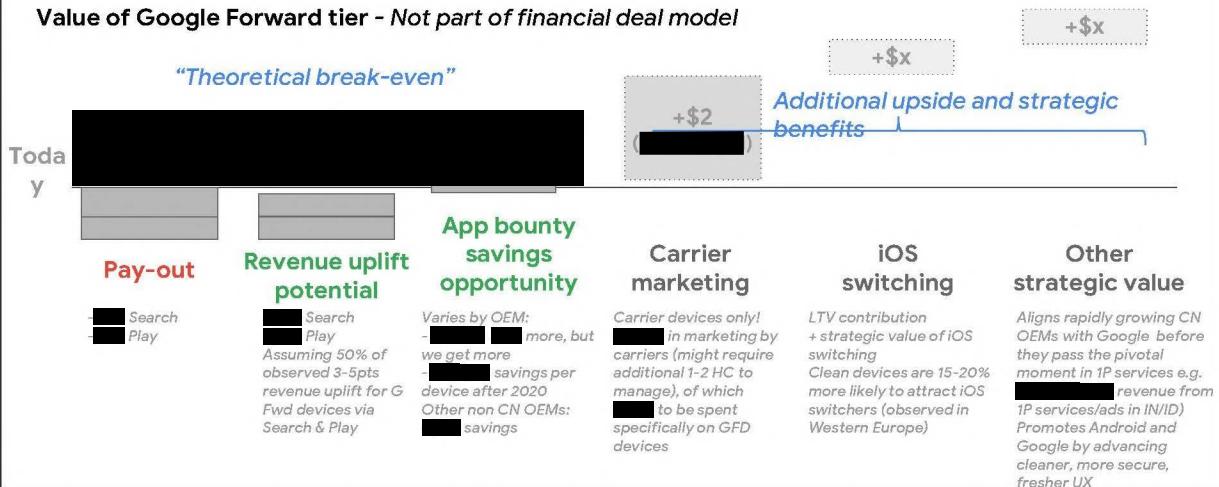
Google forward devices: [REDACTED]
([REDACTED] search + [REDACTED] Play)

- Hedge [REDACTED] non-covered revenue ([REDACTED] of browser and [REDACTED] in Europe revenue)
- Secure **critical Assistant access** points (~85% of Assistant invocations) on incremental [REDACTED] devices
- Hedge [REDACTED] non-covered Play revenue for the CN OEMs which are not likely to agree to UI/apps requirements

- [REDACTED] in Search + [REDACTED] in Play **in lieu of individual bounties**
- **Non CN OEMs (336M actives):** [REDACTED] in Search + [REDACTED] in Play **in lieu of individual bounties**
- **Carriers (35M actives):** [REDACTED] in Search to get clean devices (likely Pixel) and help incentivize them to sign up to **spend [REDACTED] in co-marketing**

10

We propose investing [REDACTED] per device to get 483M devices with best of Google experience on Android ([REDACTED] in 2023 in total)



Strategic

Aligns rapidly growing CN OEMs with Google before they pass the pivotal moment in 1P services growth (e.g. Xiaomi generated [REDACTED] revenue from 1P services and ads in IN/ID)

Promotes Android and Google by advancing cleaner, more secure, fresher UX

App efficiency

Per device** and operational savings by consolidating standalone bounties:

Xiaomi: [REDACTED]

LG: [REDACTED]

Other non CN OEMs: [REDACTED] savings per device (incl. HW button)

Additional potential upside (not part of the deal model)

[REDACTED] in marketing by carriers (might require additional 1-2 HC to manage)

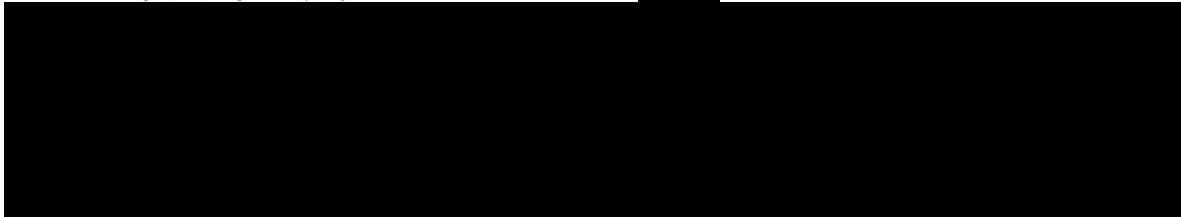
3-5pts revenue uplift for Google Forward devices via Search & Play

Clean devices are 15-20% more likely to attract iOS switchers

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Search protections on 892M more actives, plus 483M Google forward actives would cost Google incremental [REDACTED] in 2023

GDAF TAC Payments by Tier (\$M)



(\$ in millions)	2018	2019	2020	2021	2022	2023
Status Quo TAC						
Incr Search Dist RevShare from Expansion of Coverage						
Incr Search Dist RevShare from Mix Shift between 8-12%						
Incr Search Dist RevShare from (+4%) GFWD TAC Rate						
Incr GFWD Play NRE Payment / Revenue Share						
Total						

Note: Status Quo assumes current RSA rates and split between base and bonus Rev. Rev. will continue for each OEM, with the revenue under RSA increasing at a natural historical rate until a general cap of 70% (except for OEMs that have already reached actuals 70%+). GDAF model assumes partners who take GDAF will have 100% of revenue through GDAF devices within 3 years. GDAF enrollment is generally 90-100% GFWD - details on Search Model Assumptions slide in Appendix

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Other OEMs includes rampdown from Huawei RSA devices

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Overall economic impact (expected case): Total incremental payment will reach [REDACTED] in 2023 ([REDACTED] from Play; [REDACTED] Search)

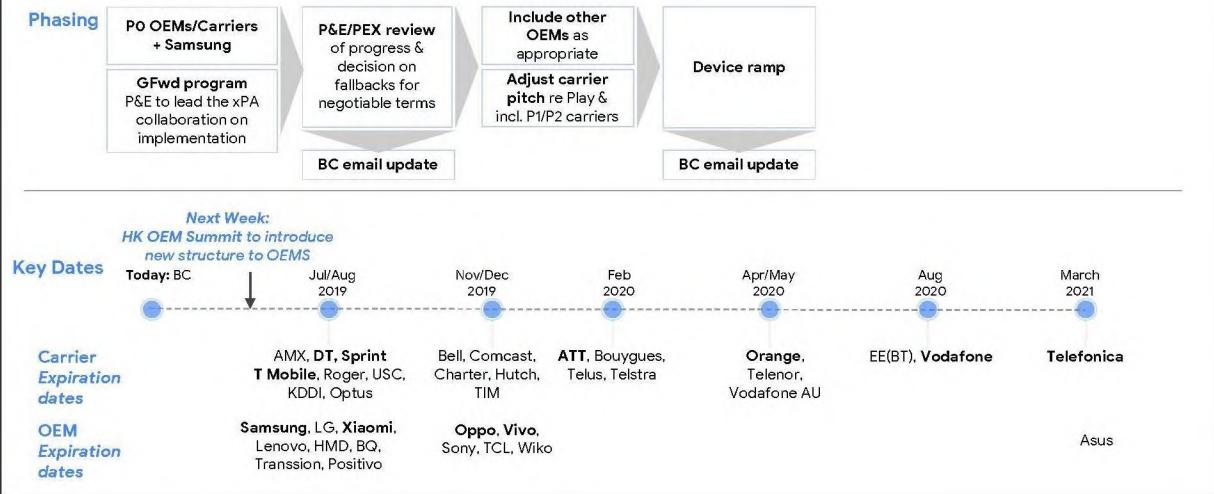
(\$ in millions)	2018A	2019E	2020F	2021F	2022F	2023F	Two Year Term
Total Search Distribution Revenue via Android							
Non-Samsung Search RSA Revenue (Status Quo)							
Non-Samsung Search RSA Revenue (GDAF)							
Total Status Quo Search TAC							
% of Search Dist Rev via Android							
Incremental GDAF Search TAC							
Expansion of Coverage							
Mix Shift between 8-12%							
TAC % Incr above Bonus Rate							
Total GDAF Search TAC							
% of Search Dist Rev via Android							
Play Rev Eligible for Rev Share							
Incr GDAF Play RevShare							
Total GDAF Payment							
Total Incremental GDAF Payment							
Mandated Carrier Reinvestment into Android							

Note: Total Search Distribution Revenue via Android Forecast Includes Samsung and Non-RSA Partner Dist, Rev and and does not include the removal of Huawei's forecasted revenue; All other line items incorporate Huawei's ramp down (revenue momentum redistributed among other OEMs according to past user switching behavior) Carrier reinvestment is based on percentages of two set of revenue share: GFWD and Other Tiers. For GFWD revenue share, required reinvestment is 50%. For Other Tiers, required reinvestment of 10% in 2019-2020, 15% in 2021-2022 and 20% in 2023

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Mandated carrier reinvestment is [REDACTED] in each year
 Other OEMs includes rampdown from Huawei RSA devices

GTM / Roll-out strategy



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Financials

[Link to pre-read materials](#)

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Overall economic impact (Expected Case): Total incremental TAC payment will reach [REDACTED] in 2023

	2018A	2019E	2020F	2021F	2022F	2023F
1 Payments to OEMs						
Status Quo Search TAC						
Xiaomi						
Oppo/ Vivo / Transsion						
Other Non-Samsung OEMs						
Total Search TAC						
Incremental TAC from GDAF						
Search TAC - Expansion of Coverage						
Search TAC - Mix Shift between 8-12%						
Search TAC - TAC % Incr above Bonus Rate						
Play Revenue Share						
Total Incremental Payment						
2 Payment to Carriers						
Status Quo						
Search TAC						
Incremental TAC from GDAF						
TAC % Incr above Bonus Rate						
KR/JP Carriers - Expansion of Coverage						
Total Incremental Payment						
3 Incr Payment above Bonus Rate						
Total Incremental Payments						

① Payments to OEMs assume all devices will be covered by a rev share agreement (because GDAF will be platform-wide) by 2023 and that enrollment of devices will generally be between [REDACTED] GFWD

② Payments to Carriers increases due to the expansion of RSA to KR/JP Carriers and the enrollment of [REDACTED]

③ Incremental Payment above Bonus Rate is the portion of the Total Incremental Payments that is due to increasing TAC % above current bonus rates [REDACTED] for most OEMs and [REDACTED] for Carriers)

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Other OEMs includes rampdown from Huawei RSA devices

1&2: We plan to spend [REDACTED] to cover [REDACTED] in key financial risks for Search and Play in addition to current deals (2023F estimates)

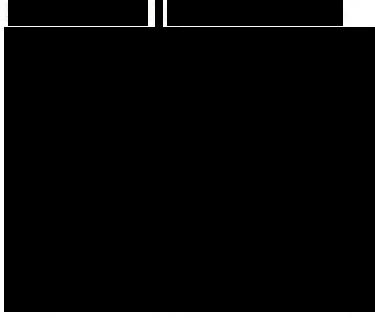
**Case 1:
Keep RSA deals as-is**



Other risk

- Assistant coverage
- Fragmented app experience
- MADA less relevant

**[Recommendation] Case 2:
Implement GDAF proposal**



- In the short run, slower velocity for some apps (Gboard, Feed) than standalone distribution deals

**Case 3:
Let all RSAs expire**



- Significant relationship damage
- Assistant coverage
- MADA less relevant

Note: Protected Search revenue: contractually protected Access points for Google (e.g. search widget outside of EEA protected by MADA; search defaults on 3rd party browsers protected by RSA); EEA search revenue at-risk assumes 5% non-Google choice; Organic winback of Google based on 20% organic search usage

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GDAF Financial Expectation Range

(\$ in billions) (% of Dist Rev)	% Enrollment in GFWD	Total Revenue Share over 2-year Deal Term				2023 Steady State Revenue Share			
		Search (OEM)	Search (Carriers)	Play	Total	Search (OEM)	Search (Carriers)	Play	Total
High Case									
Expected Case									
Low Case									

Notes: Total Revenue Share over 2-year Deal Term is showing expectations for 2020-2021.

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Other OEMs includes rampdown from Huawei RSA devices

Sensitivity Analysis of exposed revenue in 2023F under current market dynamics

Risk Vector	Low End Risk (2023F)	High End Risk (2023F)	Max At-Risk (2023F)
Search in 3P Browser	3P browser in hotseat from Chinese partners ¹ point to rival, with full Firefox-level organic winback ² [REDACTED]	3P browser in hotseat from Chinese partners ¹ point to rival, with 50% of Firefox-level organic winback ² [REDACTED]	3P browser revenue in hotseat with 0% winback [REDACTED]
Search in Europe	Rivals buy-out [REDACTED] devices in EEA, equal to non-RSA 2.0 devices ³ [REDACTED]	Rivals buy-out 30% of Chinese OEM devices in EEA [REDACTED]	All GDAF partner EEA revenue [REDACTED]
Play on CN OEMs	Chinese partners ¹ secure 33% of Play revenue (low-end usage % of Apptoide , [REDACTED])	Chinese partners ¹ secure 56% of Play revenue (high-end usage % of Apptoide , [REDACTED])	Chinese partners ¹ secure 100% of Play revenue [REDACTED]

Notes: 1) Chinese OEMs include [REDACTED] 2) Organic recovery after Firefox search default change was ~45-55% on U.S. desktops, 3) Xiaomi in Q1 '19 enrolled ~70% in RSA 2.0

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Other OEMs includes rampdown from Huawei RSA devices

Overall Play Exposure (Expected Case)

(\$ in millions)	2019E	2020F	2021F	2022F	2023F
Play Revenue Affected by GDAF (Enrolled in GFWD for RSA Partners)					
Total Apps Revenue					
Total Ads Revenue					
Total Revenue Affected					
% of Total Play Apps and Ads Rev					
Play Revenue Share					
Apps Revenue Share					
Ads Revenue Share					
Total Revenue Share					
Effective Rev Share Rate					

Play revenue would only be affected if it was earned on a GFWD GDAF device with one of the latest two OS letters

[REDACTED] of Play revenue is from RSA Partner OEM devices

~50% (at most) of actives are expected to have the last two OS letters

Play revenue share for GFWD devices would be paid out to OEMs, even if devices have a Carrier Client ID

Volume of devices under RSA continues to increase despite reduction of Huawei actives

(in millions)	Actives (Non-Samsung)					
	2018A	2019E	2020F	2021F	2022F	2023F
Xiaomi						
Oppo / Vivo						
Huawei						
Other OEMs						
Carriers						
Total Actives						
% of Revenue under RSA						

	Non-Android / iOS	Samsung	Xiaomi	Other OEMs
<i>Huawei Redistribution of Revenue</i>				

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Other OEMs includes rampdown from Huawei RSA devices

Search Model Assumptions

Underlying Assumptions

- Revenue team's distribution revenue forecast [REDACTED]
- [REDACTED] of Huawei's revenue momentum expected to leave Android

(\$ in millions)	2019	2020	2021	2022	2023
Search Dist Rev via Android	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Huawei Re-allocation of Revenue

iOS or Other Non-Android	Samsung	Xiaomi	Other Smaller Android OEMs
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Status Quo

- % of Distribution revenue for each OEM continues historical trend, with maximum [REDACTED] of revenue under RSA (except for Asus, Lenovo, and HMD)
- Historical TAC rates (ratio split between Base and Bonus are maintained), with maximum of [REDACTED] and minimum of [REDACTED] (except for Sony and Asus which have a Bonus [REDACTED] TAC rate from RSA 2.0)

GDAF Expected Case

- % of Distribution Revenue under RSA increases to [REDACTED] either at historical trend or within 3 years of current RSA expiry, whichever comes first
- OEMs
 - TAC Rate of [REDACTED] for Optimized and [REDACTED] for GFWD for most partners [REDACTED] GFWD for Xiaomi, Sony, and Asus)
 - Enrollment between [REDACTED] GFWD for most partners
 - [REDACTED] GFWD in all geographies: Asus, HMD, Lenovo, LG, Sony
 - [REDACTED] Optimized in all geographies for TCL
 - [REDACTED] GFWD / [REDACTED] Optimized for all other Partners (except [REDACTED] for Xiaomi in IN/ID)
 - Oppo / Vivo / Transsion expected to take Fallback #1 [REDACTED] search rate while still receiving Play revshare)
- Carriers
 - TAC Rate of [REDACTED] for Optimized and [REDACTED] for GFWD
 - Enrollment [REDACTED] Optimized, [REDACTED] GFWD
- KR and JP Carriers are also under consideration (if we decide to pursue RSA contracts with them)
 - Their potential revenue is represented by [REDACTED] (steady state) of KR & JP revenue for Kyocera, Sharp, Lenovo, Xiaomi and Sony devices
 - Their ramp is expected to be 5 years instead of 3 because of historically slow ramp time for past deals in [REDACTED]

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Other OEMs includes rampdown from Huawei RSA devices

Play Model Assumptions

Underlying Assumptions

- Play finance team's Apps/Games/Ads forecast utilized (assumed ramp up to steady state within ~3 years of current RSA expiration)
- OEM share of Play revenue assumed to shift according to historical trends and follow 28DA forecasts (similar to Search Model)
- Removal of [REDACTED] of forecasted Play App/Games revenue to remove DCB revenue from Play Revenue Share eligibility
- 50% of devices assumed to have the last two OS letter updates
- Play revenue share to OEMs is paid on all manufactured devices (regardless of Client IDs)
 - Revenue Share is only paid on GFWD devices (except for Oppo/Vivo/Transsion where we expect fallback terms to occur so that they will receive Play RevShare even if they do not meet all GFWD requirements)
 - Revenue Share Rates:
 - Xiaomi, Oppo, Vivo and Transsion will have [REDACTED] RevShare
 - Fly Mobile will [REDACTED]
 - HMD, Lenovo, LG and Sony will have [REDACTED] RevShare
 - All other OEMs will have [REDACTED] RevShare
 - Enrollment:
 - Expected to be the same as Search Model's Core/Optimized/GFWD enrollment for each OEM in each geography
 - Even if a device has a Carrier Client ID, we expect GDAF tier enrollment to be the same as if it was OEM Client ID
- Sharp (not a current RSA Partner) devices will also potentially be eligible for Play revenue share, with assumed 100% GFWD enrollment at a [REDACTED] Revenue Share rate

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Other OEMs includes rampdown from Huawei RSA devices

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Detailed Materials (Appendix)

- 1: (Pre-read) Context on Android ecosystem
- 2: (Pre-read) 2016 RSA overview
- 3: (Pre-read) Europe impact
- 4: Detailed review of GDAF proposal

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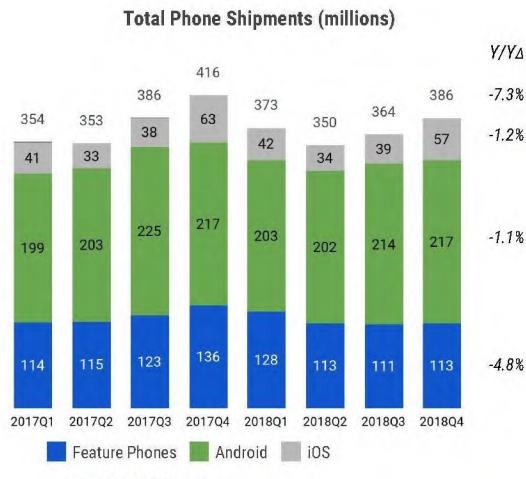
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Pre-read

(Context on Android Ecosystem)

26

Global phone shipments are stalling; shipments declined by 2% Y/Y in 2018, with all segments experiencing losses

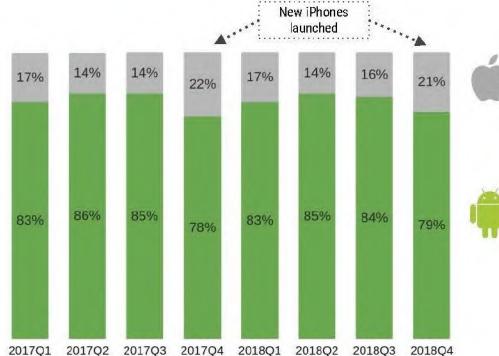


- **Smartphone shipments declined by 1.2% y/y in 2018** (Android -1.1%, iOS -1.2%)
 - All of iOS decline was in Q4 (-10% Y/Y) with less successful 2019 launches
 - Overall shipment decline due to shrinking entry segment, increasing device age and growing secondary market
- **Feature phone shipments declined by 5% y/y in 2018**, with JioPhone success unable to offset overall category decline

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Android global share of smartphones has increased slightly (1ppt), but regional numbers highlight share loss in N.America

Y/Y Android share relatively steady outside expected Q4 seasonality



Apple grew its ~40% share in the US while Samsung and Huawei helped gain share in APAC and Europe

Region	Smartphone Sales Growth (Y/Y)	Android Share (Q4 2018)	Android Share Change (Y/Y)
Developing APAC	6%	98%	1%
L'EMEA*	-3%	93%	2%
North America	-7%	49%	-6%
EEA	-3%	70%	3%
Developed APAC	-1%	59%	3%
Global	-1.2%	79%	+2%

*LatAm, non-EEA Europe and MEA

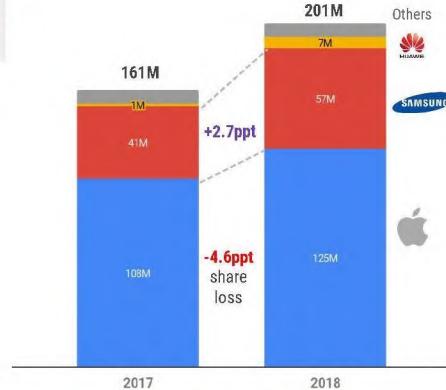
28

Shift to ultra-premium prominent in developed geos; Samsung in APAC and Huawei in Europe drove share gain for Android

\$400+ Shipment Growth by Region (2017 → 2018)

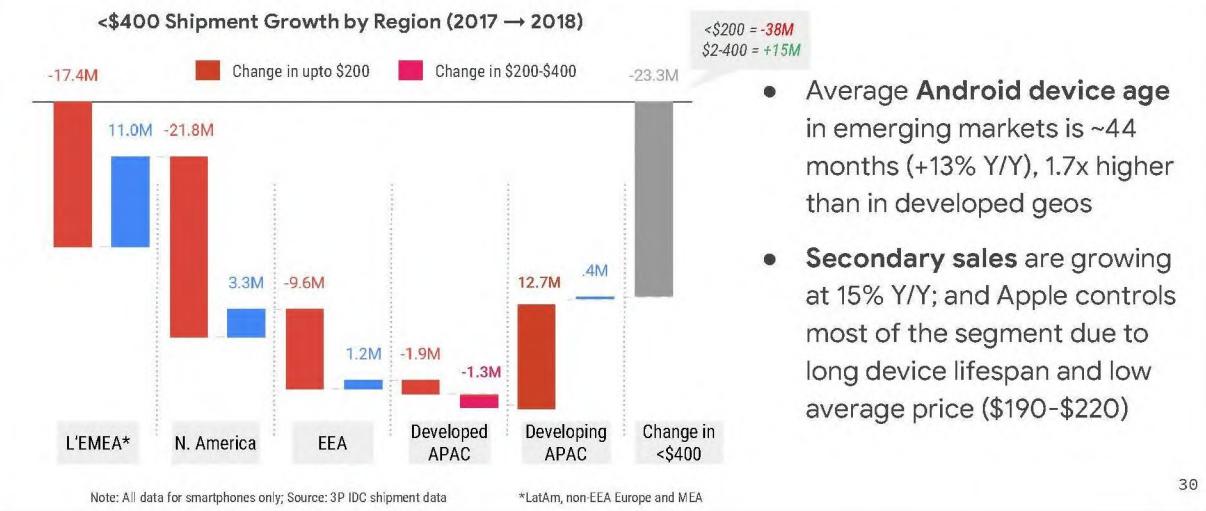


OEM Share of \$700+ Shipments (2018 vs. 2017)

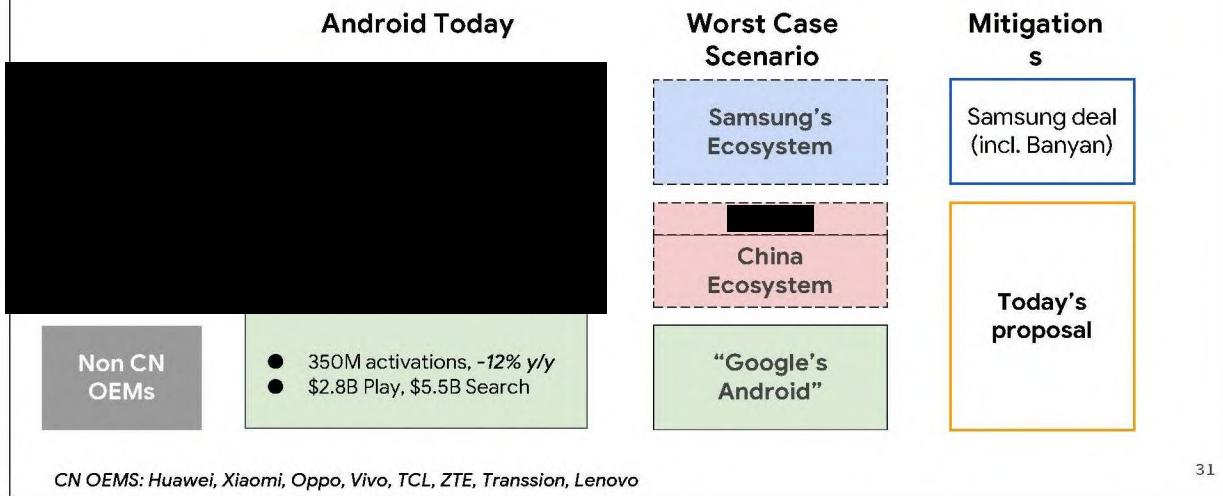


29

Declines in entry-level not recovered by shift to mid-tier; Drivers: increase in device lifespan + secondary market growth

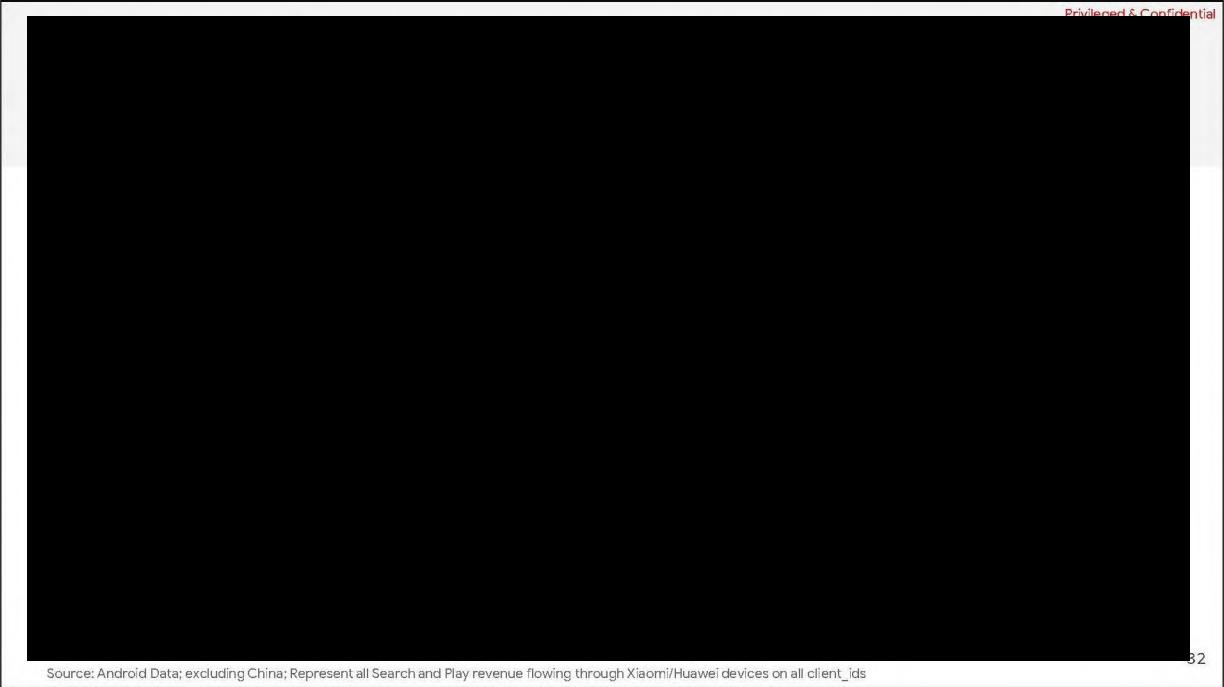


We need to invest in Android OEMs to hedge against ecosystem fragmentation



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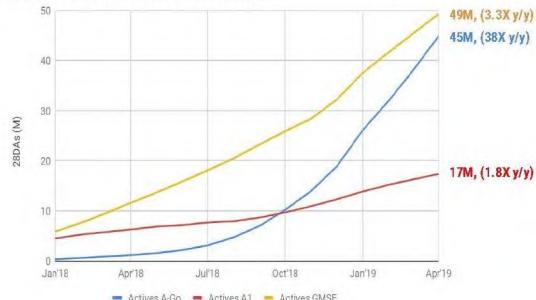
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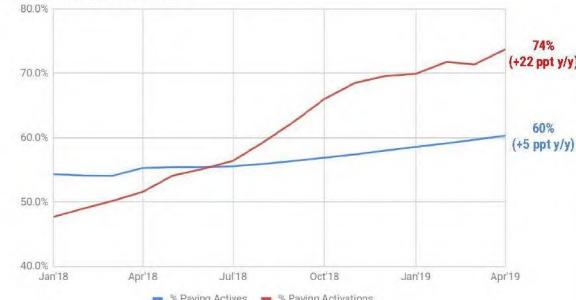
Source: Android Data; excluding China; Represent all Search and Play revenue flowing through Xiaomi/Huawei devices on all client_ids

Clean Android devices still represent a very small (<5%) part of Android Ecosystem

Scaled Programs Coverage over time



RSA Coverage over time



- **Android Go:** Growth continues to accelerate, reaching 45M actives (8M Apr'19 actvns). Samsung and Transsion alone account for 45% of these activations, but achieved it in different ways. Samsung offerings were limited to the J2 Core and J4 Core, while Transsion had over 42 distinct models.
- **Android One:** Xiaomi and Nokia continue to be the two most engaged partners; Xiaomi alone represented 48% of 28DAs as of Apr'19. However, recent strength in Nokia's budget and mid-tier lineup (3, 5, 6) enabled it to pull ahead of Xiaomi (0.45M versus 0.38M actvns in Apr'19)
- **GMS Express:** Despite graduation to head OEM status, Transsion remains the dominant GMSE partner, accounting for 52% of 28DAs and 43% of actvns in Apr'19

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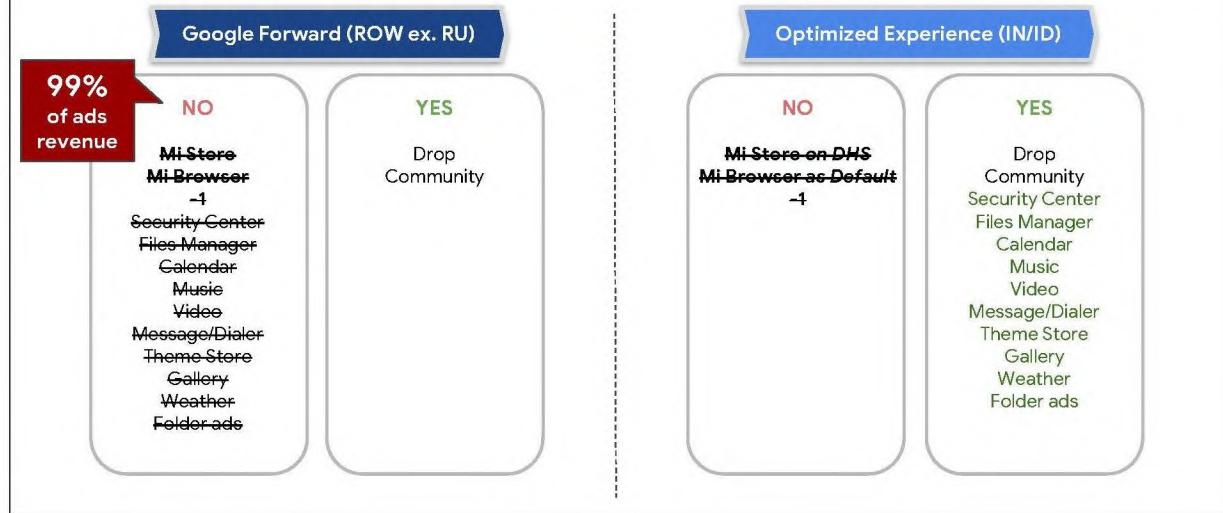
Aptoide powered OEM stores see very meaningful traction on Android devices



Install rate = % of OEM's 28DAU with store installed; Usage rate = % of lockbox 28DAU that had app open in foreground for at least 3 seconds

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Chinese OEMs have significant overlap with GMS apps and are actively monetizing these apps through ads



*Global UI has a team of 400

*All apps listed are Xiaomi first party

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Chinese OEM own apps are often getting substantially more traction on their devices than substitute GMS apps



MIUI presents a more cluttered, preload-heavy OOB experience

Mi A2: Android One (Pie)	Redmi Note 7 Pro: MIUI 10	
<p>GMS apps featured, single Mi folder on home screen</p>  <p>Default home screen</p>	<p>Preloaded Mi Store + Mi Apps on home screen and +1 screens</p>  <p>Default home screen</p>	<p>Promoted apps in home screen folders</p>  <p>Default +1 screen</p>
<p>No Default +1 screen</p>	 <p>Default +1 screen</p>	

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Intrusive ads are enabled by default across the MIUI experience

● Ads also show up in MIUI Music app, File Explorer, Home Screen Folders, App Installer
 ● While there are options to remove the ads, the process is hidden and complex

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Pre-read

(update on 2016 RSA)

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Today: Two core agreements (MADA, RSA) supplemented with an array of subsequent deals & programs

MADA

Non monetary barter. Access to Google apps in exchange for placement and security updates

RSA

Revenue share (2 tiers). Premium placement, defaults + exclusivity for Search & Assistant; Feed and Gboard intended, but carved out of most of the devices (*Samsung, HOVX*)

Other Deals

Various (bounties, etc.). Mostly cover preload gaps and access points not covered by MADA and RSA

In the current world, each partner deals with multiple teams / deals to build an end-to-end view of how to work with Google

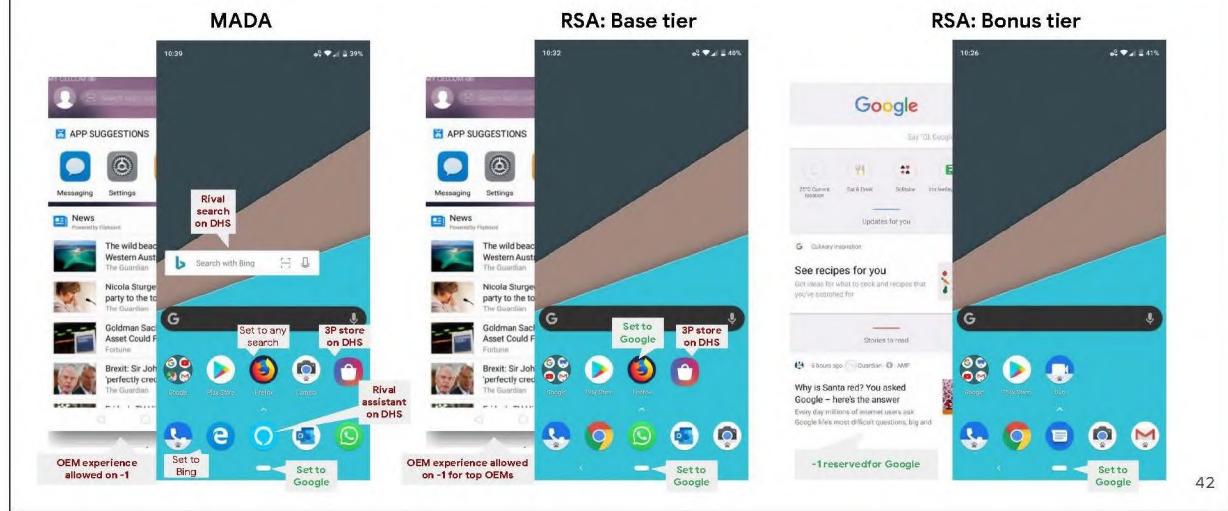
40

Introduction to what Android core commercial agreements are, and their basic premise

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Recap: RSA Deal terms - BC approved (non Samsung) 31/10/16

Recap: RSA Deal terms - BC approved (non Samsung) 31/10/16



Additional Context: Apps Contractual coverage (excl. Search, Chrome, Play and Assistant)

	MADA	CDAF Core (incremental to MADA)	CDAF Optimized (incremental to Core)	CDAF Google Forward (incremental to Optimized)	Separate distribution deal?	Additional Context
YouTube	preload	-	-	-	-	
Maps	preload	-	-	-	-	
Photos	preload	-	-	default	yes, defaults	Missing some features prioritized by OEMs
Drive	preload	-	-	-	-	
Gmail	preload	-	-	default	-	
Duo	preload	-	-	default	Comms suite, default	
Play Movies	preload	-	-	-	-	
YT (Play) Music	preload	-	-	-	-	
Messages	-	-	-	default	Comms suite, default	Carriers block it in US, JP
Gboard	-	-	default	-	yes, defaults	
G Pay	-	-	-	preload, gestures	yes, preload	
Lens	-	-	-	exclusivity, camera integration	under consideration	Amazon has competing app
Calendar	-	-	-	default	-	
Google One	-	-	-	-	yes, preload	
Dialer	-	-	-	default	Comms suite, default	Carriers block it in US, JP
Contacts	-	-	-	default	Comms suite, default	Carriers block it in US, JP
Android Auto	headless APK	-	-	-	-	
Docs/Sheets/Slides	-	-	-	-	yes, preload	
Keep	-	-	-	-	-	
Translate	-	-	-	-	-	
News	-	-	-	preload	yes, preload	
Podcasts	-	-	-	preload	yes, preload	
Shopping	-	-	-	preload	yes, preload	
Play Books	-	-	-	-	-	
Fit	-	-	-	-	-	
Digital Wellbeing	headless APK	-	-	-	-	
Family link	headless APK	-	-	-	-	
Files	preload on Go	-	-	-	-	
Calculator	-	-	-	-	-	
Clock	-	-	-	-	-	

RSA Timelines: Current RSA deals starting to expire, giving us opportunity to re-think and optimize the terms

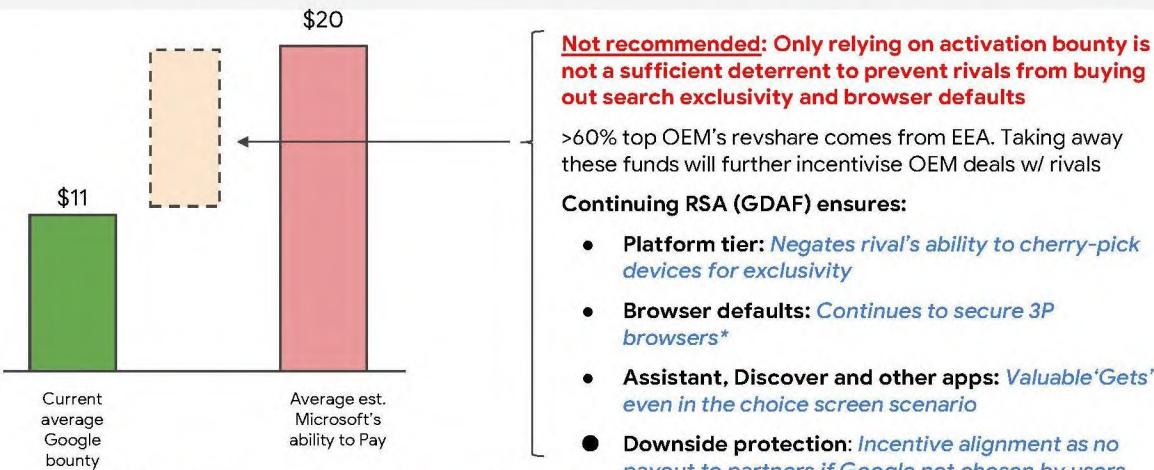
	Today	Jul/Aug 2019	Nov/Dec 2019	Feb 2020	Apr/May 2020	Aug 2020	March 2021
EEA Carriers		DT	Hutchinson, TIM	Bouygues	Orange Telenor	EE(BT), Vodafone (+1yr autorenewal)	Telefonica
ROW Carriers		AMX, Sprint T Mobile, Roger, USC, KDDI, Optus	Bell, Comcast, Charter	ATT, Telus, Telstra	Vodafone AU		
OEMs		Samsung, LG, Xiaomi, Lenovo, HMD, BQ, Transsion, Positivo	Huawei, Oppo, Vivo, Sony, TCL, Wiko				Asus

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Pre-read (Europe)

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In EEA: We recommend continuing RSA deals to ensure Google distribution



Worst case scenario: Devices with exclusive rival providers for search, assistant and browser

MSFT / AMZN distribution:

- **Search app exclusive on device**
- **Exclusive search widget + icon placement on DHS**
- **Competitor launcher set OOB with all search access points set to competing search service**
- **Browser default and exclusive on device**, with competitor search service as default
- **Assistant icon on DHS and enabled with OOB hotword and gesture**
- **-1 screen** controlled by competitor search app / feed



Estimated average rival offering -> \$20/device

\$14/device ++

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Details on the GDAF proposal

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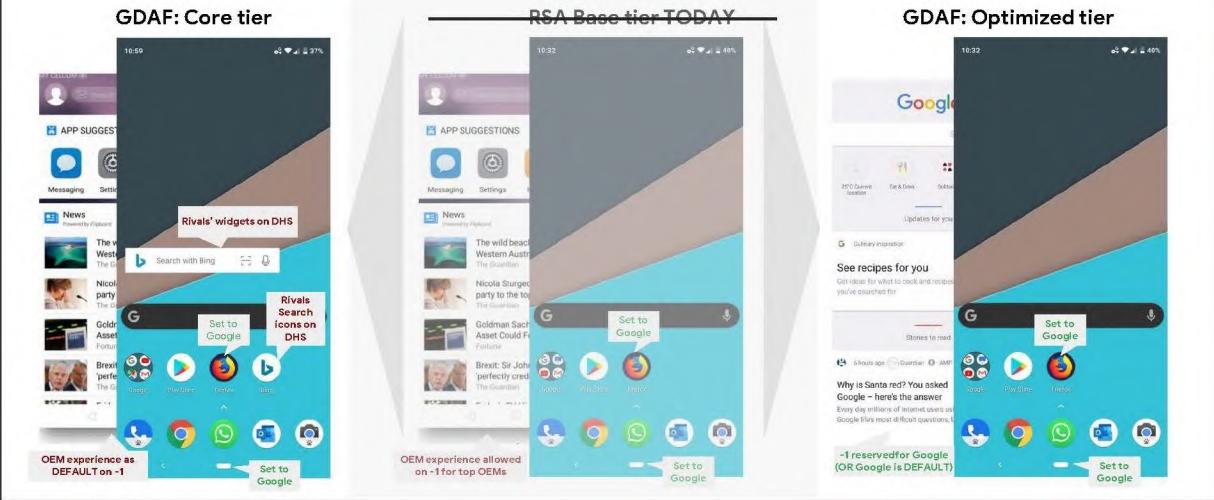
GDAF: 3-tiered RSA structure, aiming to give partners more incentives to go all Google while securing key access points

New terms		Core Experience PLATFORM	Optimized Experience DEVICE BY DEVICE	Google Forward DEVICE BY DEVICE
Preloads	MADA		MADA + GBoard	MADA + Google defined payload; Google has approval on all preloads; PAI used
Exclusivity	Assistant: DHS + OOB gesture & hotword exclusivity	Search: Full exclusivity Assistant: Full exclusivity		Google exclusivity and defaults for all preloaded apps; use stock Android UI; No apps with APK install rights
Defaults	Search: No exclusivity OEM browser default Chrome: Default browser (optional)	Search: OEM browser default Chrome: Default browser (optional) Gboard: Default		
Placement & Gestures	MADA Search: Feed on -1 required (shared tab with partner default okay) Assistant: Powertap	MADA Search: Feed on -1 required (shared tab with <i>Google default</i> as fallback) Assistant: icon on DHS + powertap	MADA Search: Feed on -1 Assistant: icon on DHS, enhanced integrations (<i>Google defined payload</i> e.g. dedicated button)	
Play	MADA	MADA		Exclusivity
Safety & Updates				60d security freshness, last 2 letter updates

1 // SPLITTING BASE TIER

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Core & Optimized: Splitting up current base RSA into 2 tiered experience to secure platform protections for browser & Assistant



1&2: We plan to spend [REDACTED] to cover [REDACTED] in key financial risks for Search and Play in addition to current deals

Hedged Details ('23F)

1 Search in 3P Browser

[High risk/immediate] Google as 3P browser default could be replaced, exposing [REDACTED] of annual Google distribution revenue (e.g. Bing is already default on some Vivo/Xiaomi devices in India partially contributing to [REDACTED] search rev decline in 2018*)

1 Search in Europe

[High risk/mid term] Without offering further incentive, **rivals can get full exclusivity** for search widgets and browsers exposing [REDACTED] of Google revenue in '23F (high risk, but Google likely to win some portion back)

1 Assistant

[High risk/mid term] **Alexa** could be preloaded and deeply integrated (icon on DHS, hotword, hardware affordance - access points that account for 85%+ of Android's Google Assistant queries). This already happens on 14M Amazon Prime devices (growing 14% y/y)

2 Play on CN OEMs

[High risk/mid term] With a vibrant CN developer community and heightened geopolitical concerns, there is increased pressure for **Huawei and other CN OEMs to double down on their own app stores** putting [REDACTED] of Play revenue at risk

NOTES: * Per user search revenue decline also driven users moving search into apps (e.g. video search into Tik Tok) and lower searchiness on non-Chrome (e.g. UC browser)

3&4: We propose investing [REDACTED] in getting [REDACTED] devices promoting best Google experience on Android ([REDACTED] per device)

3&4

Strategic Reasons

- Aligns rapidly growing CN OEMs with Google before they pass the pivotal moment in 1P services growth (e.g. [REDACTED])

- Promotes Android and Google by advancing cleaner, more secure, fresher UX

 -50% System crashes*
  +20% Battery efficiency*

 +40-50% GMS app usage uplift
  2x User NPS scores

3&4

Efficiency

Per device** and operational savings by consolidating standalone bounties:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- Other non CN OEMs: [REDACTED] savings per device (incl. HW button)

3&4

Additional potential upside (not part of the deal model)

- [REDACTED] in marketing by carriers (might require additional 1-2 HC to manage)
- [REDACTED] revenue uplift for Google Forward devices via Search & Play
- Clean devices are 15-20% more likely to attract iOS switchers (observed in Western Europe)

* Xiaomi A-One devices vs. same-spec'd Xiaomi MIUI devices; **Varies by device

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Per Unit Comparison: Bounties compared to GFWD Portion of Incremental Payment

	(A)	(B)	(C) = (A) + (B)	(D)	(A) - (D)	(C) - (D)
	Avg App Bounty	Button Bounty	Total App and Button Bounty	GFWD Portion of Incremental Pmt Per Unit in 2020	Savings from apps only in GFWD	Savings if we can get the HW button in GFWD
Xiaomi						
Sony						
Lenovo						
LG						
HMD						

Additional
"gets" are Clean
UI, Play
Protections,
Letter
Upgrades,
GMail, GCal

Play
included

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Other OEMs includes rampdown from Huawei RSA devices

Why: converting MIUI devices to a cleaner, fresher, and more secure UI also improves UX through fewer crashes and better battery

	<u>Device</u>	<u>Mean time between failures¹ (days)</u>	<u>System crashes per device-day</u>	<u>Projected battery hrs per 1000mAh</u>	<u>System jank rate %²</u>
Android One	Mi A1				
	Mi A2				
	Mi A2 Lite				
MIUI	Redmi Note 4 (A1 peer ³)				
	Redmi Note 5 (A2 peer ⁴)				
	Redmi 6 Pro (A2 Lite peer ⁵)				
	A-One average				
	MIUI average				

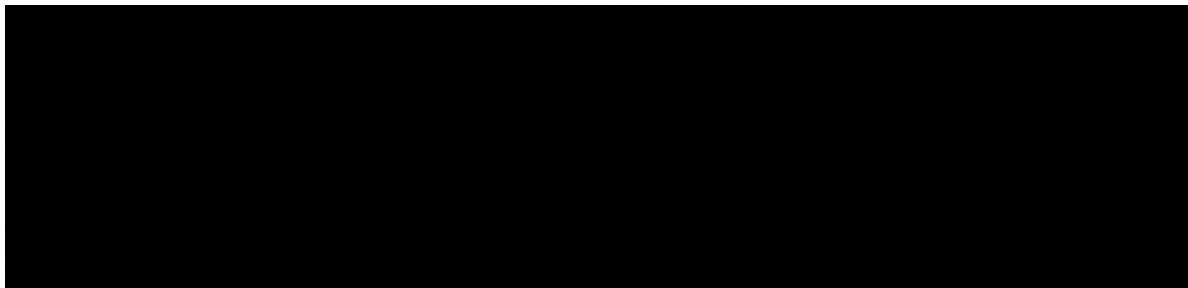
Source: Android Device Health dashboard. Data for latest/most popular builds of devices with sufficient data for April 2019 period

1.Device MTBF can be higher than length of time in market as MTBF is projected from crash rates from active devices. 2. Average of System UI and System apps jank rates. 3. Note 4 has same display, chipset, RAM as A1 but with bigger battery. 4. Note 5 has slightly worse processor, similar RAM, bigger battery vs. A2. 5. Redmi 6 Pro has same specs as A2 Lite

13% Play and 17% Search growth for rest of ecosystem

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So how do partner economics work? (Illustrative Example: Xiaomi in 2020)



Google forward experience (25M MAUs)

Overall Payout

(in millions)	2019E	2020F	2021F	2022F	2023F
Status Quo (just RSA)					
GDAF Incremental Search					
GDAF Incremental Play					
RSA Actives					
Total OEM Client ID Actives					

*App bounties would include: \$0.5 for Feed; \$0.08 for News; \$0.08 for Podcasts; \$0.11 for Gboard; \$0.05 for Pay and \$0.06 for Comms

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Work in Progress / Graveyard

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ALTERNATIVE 1

Search & Play revenues are top priority for Google forward tier
All gets incremental to Optimized tier; Google can update asks during the deal

Prioritization logic	Must have	Negotiable / Fallbacks
<p>[P0] Secure and grow Search and Play revenue</p>	<p>Search: exclusive Feed on -1 Play: DHS exclusivity</p> <p>Integrations: BOM-neutral physical affordance, lockscreen integration Apps: Gmail, Calendar default</p> <p>Apps: Messages default (in geos where it's possible); GPay preload UI & 3rd party apps: No duplication for GMS apps + Google approval</p>	<p>Play: Full exclusivity; Play FOP setup in OOB experience Search & Play: Letter upgrades</p> <p>Integrations: Dedicated button</p> <p>Substitute with other asks</p> <ul style="list-style-type: none"> ● Rest of Comms Suite ● Additional GPay integrations ● Default for Photos ● Camera integrations incl. Lens ● Preload of News, Podcasts
<p>[P1] Make the Assistant more helpful</p>		
<p>[P1] Create cohesive phone experience</p>		

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Additional Context: Apps Contractual coverage (excl. Search, Chrome, Play and Assistant)

	MADA	GDAF	Separate distribution deal?	Additional Context
Youtube	preload	-	-	
Maps	preload	-	-	
Photos	preload	default	yes, defaults	Missing some features prioritized by OEMs
Drive	preload	-	-	
Gmail	preload	default	-	
Duo	preload	default	Comms suite, default	
Play Movies	preload	-	-	
YT (Play) Music	preload	-	-	
Messages	-	default	Comms suite, default	Carriers block it in US, JP
Gboard	-	default	yes, defaults	
Pay Pay	-	preload, gestures	yes, preload	
Lens	-	exclusivity, camera integration	under consideration	Amazon has competing app
Calendar	-	-	-	
Google One	-	default	yes, preload	
Dialer	-	default	Comms suite, default	Carriers block it in US, JP
Contacts	-	default	Comms suite, default	Carriers block it in US, JP
Android Auto	headless APK	-	-	
Docs/Sheets/Slides	-	-	yes, preload	
Keep	-	-	-	
Translate	-	-	-	
News	-	preload	yes, preload	
Podcasts	-	preload	yes, preload	
Shopping	-	-	yes, preload	
Play Books	-	-	-	
Fit	-	-	-	
Digital Wellbeing	headless APK	-	-	
Family Link	headless APK	-	-	
Files	preload on Go	-	-	
Calculator	-	-	-	
Clock	-	-	-	

Exhibit A5

Public Redacted Version

EXHIBIT 6

FILED UNDER SEAL

EXHIBIT A5

to

C. Cramer Declaration